

Medical Laboratory Technician

Inland Empire/Desert Region (Riverside and San Bernardino counties)

This workforce demand report uses state and federal job projection data developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.

Summary

- Community college medical laboratory technology programs provide the knowledge, skills, and abilities that lead to the community college-level occupation, clinical laboratory technologists and technicians.
- Clinical laboratory technologists and technicians are projected to have 163 annual job openings through 2025, increasing employment by 13%.
- The 50th percentile hourly earnings for clinical laboratory technologists and technicians is \$24.77 per hour, above the regional \$24.36 per hour self-sustainable earnings standard for a single adult with one child.
- Regional community colleges do not currently offer medical laboratory technology programs. Other private educational institutions in the region have issued 18 awards annually over the previous three academic years.
- The Centers of Excellence recommends developing a medical laboratory technology program to meet the regional demand for clinical laboratory technologists and technicians in the region.

Introduction

California Community College medical laboratory technology (TOP 1205.00) programs prepare students for employment as clinical laboratory technologists and technicians (Medical Laboratory Technicians) through training related to the application of chemical, physical science, engineering, and technological concepts, principles, and practices to human and other living systems (Taxonomy of Programs, 2012). The knowledge, skills, and abilities trained by medical laboratory technology programs lead to the clinical laboratory technologist and technician occupation.

Clinical Laboratory Technologists and Technicians (29-2018)

Perform complex medical laboratory tests for diagnosis, treatment, and prevention of disease. May train or supervise staff. Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.

Sample job titles: Medical Laboratory Technicians (Medical Lab Technician), Medical Laboratory Technician (MLT), Certified Clinical Laboratory Technician, Clinical Laboratory Technician (Clinical Lab Technician), Laboratory Assistant (Lab Assistant), Laboratory Technician (Lab Tech), Medical Technician

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Work Experience Required: None

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 39%

While this occupation typically requires workers to obtain a bachelor's degree prior to employment, it is considered a middle-skill occupation because 39% of incumbent workers have a community college degree as their highest level of educational attainment.

Job Counts and Projections

In 2020, there were 1,871 clinical laboratory technologist and technician jobs in the Inland Empire/Desert Region. This occupation is projected to have 163 annual job openings to fill new or backfill jobs that workers are permanently vacating (includes occupational transfers and retirements). Employment for clinical laboratory technologists and technicians is expected to increase by 13% through 2025. Exhibit 1 displays the job counts, five-year projected job growth, job openings, and the share of incumbent workers age 55 years and greater in the region. Riverside County job demand is available in Exhibit 12 on page 8.

Exhibit 1: Five-year projections, 2020-2025

2020 Jobs	2025 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
1,871	2,122	13%	817	163	22%

Source: Emsi 2021.3

Exhibit 2 shows the number of job ads posted during the last 12 months and the regional and statewide average time fill. Job advertisements have been limited to positions that require a medical laboratory technician license. Of the 1,282 total job ads posted for clinical laboratory technologists and technicians, approximately 8% (101 job ads) required a medical laboratory technician certification. On average, regional employers fill online job advertisements for clinical laboratory technologists and technicians within 29 days. This is three days shorter than statewide time to fill, indicating that regional employers may face few challenges filling open positions as other employers in California.

Exhibit 2: Job ads and time to fill

Job Ads	Regional Average Time to Fill (Days)	Statewide Average Time to Fill (Days)
101	29	32

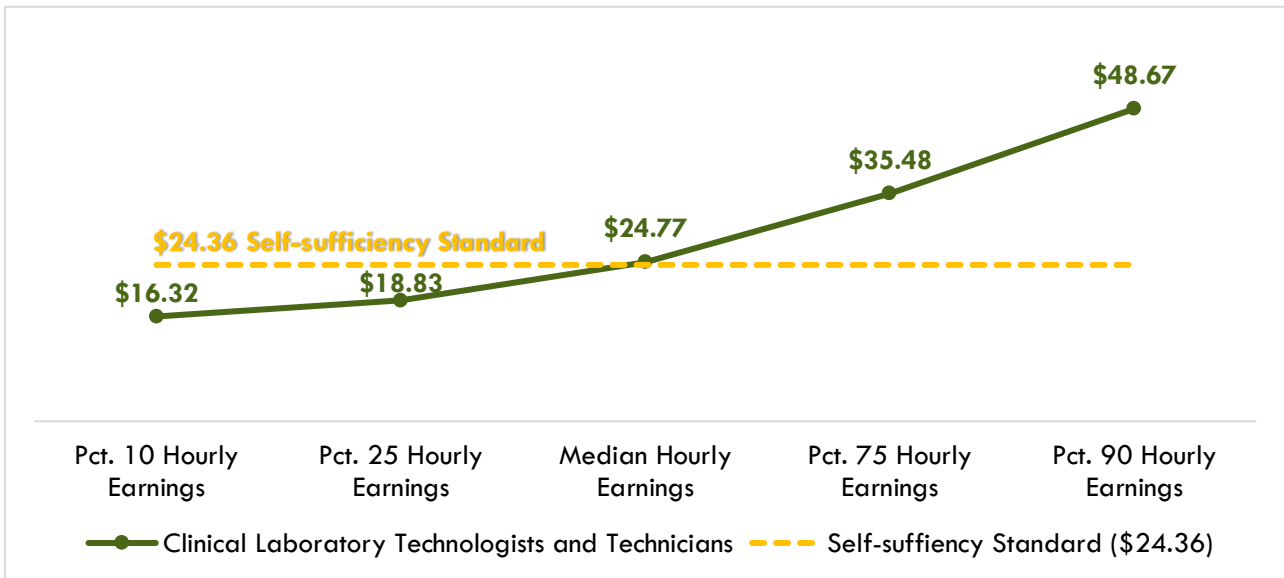
Source: Burning Glass – Labor Insights

Earnings and Benefits

Community colleges should ensure their training programs lead to employment opportunities that provide self-sustainable income. The University of Washington estimates that a self-sufficient hourly rate for a single adult with one school-age child is \$24.36 per hour or \$51,452 annually in Riverside County; \$23.73 per hour or \$50,119 annually in San Bernardino County (Pearce, 2021). For this study, the higher hourly earnings requirement in Riverside County is adopted as the self-sufficiency standard for the two-county region.

The median hourly earnings for clinical laboratory technologists and technicians surpass the self-sustainability rate, indicating that only the top 50% of workers in the field earn self-sustainable earnings. Exhibit 3 displays the hourly earnings for clinical laboratory technologists and technicians.

Exhibit 3: Hourly earnings by percentile



Source: Emsi 2021.3

According to the California Labor Market Information Division's occupational guides, clinical laboratory technologist and technician benefits generally include medical, dental, life, and vision insurance as well as vacation, sick leave, and retirement plans (Detailed Occupational Guides, 2021).

Advertised Salary from Online Job Ads

There were too few job advertisements for clinical laboratory technologists and technicians to obtain reliable salary information. Only 5% of job advertisements included salary information.

Job Titles, Employers, Skills, Education, and Work Experience

Exhibit 4 displays the job titles most frequently included in clinical laboratory technologist and technician job advertisements posted over the last 12 months in the Inland Empire/Desert Region. Displaying job titles may provide some insight into the positions employers are looking to fill.

Exhibit 4: Job titles most frequently in employer job ads for clinical laboratory technologists and technicians

Job Titles	Job Ads
Medical Laboratory Technician (MLT)	46
Travel Medical Laboratory Technician	17
Licensed Medical Laboratory Technician	8
Certified Laboratory Technician I – Clinical Laboratory	7
Plasma Center Technician	5
Medical Laboratory Technician – Per Diem	5
<i>All other job titles</i>	13
Total	101

Source: Burning Glass – Labor Insights

Exhibit 5 displays the employers that posted multiple job ads for clinical laboratory technologists and technicians in the Inland Empire/Desert Region over the last 12 months. Displaying employer names provides some insight into where students may find employment after completing a program. CSL Plasma posted the most advertisements in the region, accounting for 19% of job advertisements.

Exhibit 5: Employers posting the most job ads for clinical laboratory technologists and technicians

Top Employers	Job Ads
CSL Plasma	19
Healthcare Traveler Allied Health	10
Department of Veterans Affairs (Loma Linda)	7
St. Mary Medical Center	5
Chino Valley Medical Center	5
Healthcare Employment Network, LLC	5
Riverside Community Hospital	4
Inland Valley Medical Center	4
M Health Fairview Clinic – Apple Valley	3

Top Employers	Job Ads
St. Bernardine Medical Center	3
BioLife Plasma Services	3
Desert Valley Hospital	3
Montclair Hospital Medical Center	3
St. Joseph Health System	2
All other employers	25
Total	101

Source: Burning Glass – Labor Insights

Exhibit 6 lists a sample of specialized and employability skills employers' seek when looking for workers to fill clinical laboratory technologist and technician positions. Specialized skills are occupation-specific skills that employers request for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is often referred to as "soft skills." The skills requested in job postings may be utilized to guide curriculum development.

Exhibit 6: Sample of in-demand skills from employer job ads

Specialized skills	Employability skills
<ul style="list-style-type: none"> • Quality Assurance and Control • Microbiology • Chemistry • Laboratory Procedures • Immunology 	<ul style="list-style-type: none"> • Troubleshooting • Teamwork/Collaboration • Building Effective Relationships • Written Communication • Telephone Skills

Source: Burning Glass – Labor Insights

According to the Bureau of Labor Statistics, approximately 39% of incumbent workers in this field hold a community college-level of educational attainment; "some college, no degree" and an "associate degree." Online job advertisements indicate that the majority (56%) of employers seeking clinical laboratory technologists and technicians sought candidates with an associate degree. Exhibit 7 displays the typical entry-level education, educational attainment, and minimum advertised education requirements for clinical laboratory technologists and technicians.

Exhibit 7: Typical entry-level education, educational attainment, and minimum advertised education requirements

Typical Entry-Level Education Requirement	CC-Level Educational Attainment*	Number of Job Ads	Real-Time Minimum Advertised Education Requirement		
			High school or vocational training	Associate degree	Bachelor's degree or higher
Bachelor's degree	39%	59	20%	56%	24%

Source: Emsi 2021.3, Burning Glass – Labor Insights

*Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework

Exhibit 8 displays the work experience typically required before employment and the real-time work experience requirements from employer job ads for clinical laboratory technologists and technicians. Job advertisements indicate that the majority of employers sought candidates with zero to two years of work experience.

Exhibit 8: Work experience required and real-time work experience requirements

Work Experience Typically Required	Real-Time Work Experience			
	Number of job postings	0 – 2 years	3 – 5 years	6+ years
None	81	63%	32%	5%

Source: Emsi 2021.3, Burning Glass – Labor Insights

Certifications

All of the job advertisements in this report required candidates with a certified medical laboratory technician (MLT) certification. The California Department of Public Health (CDPH) Laboratory Field Services (LFS) requires that individuals complete an associate degree related to clinical laboratory science with specific course requirements related to biological sciences, chemistry, and biology before licensure. Alternative paths to licensure include a six-month training program approved by the LFS, an accredited training program from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), or three years of on-the-job experience in a clinical laboratory. For more information regarding MLT licensure, please visit the CDPH website (CDPH, 2021).

Exhibit 9: Certifications typically required in advertisements for clinical laboratory technologists and technicians

Certifications	Job Ads (n=101)
Certified Medical Laboratory Technician	101
Basic Life Support Certification	21
American Society for Clinical Pathology (ASCP) Certification	18
Phlebotomy Certification	17
Basic Life Support (BLS)	13

Source: Burning Glass – Labor Insights

Student Completions for Programs

There are no medical laboratory technology (TOP 1205.00) programs currently offered by community colleges in the Inland Empire/Desert Region. While there are no programs offered in the region, California program outcome data may provide a useful insight into the likelihood of success for the proposed program. Community college student outcome information based on the selected TOP code is provided in Exhibit 10. The outcome methodology is available in the appendix section of this report.

Exhibit 10: 1205.00 – Medical laboratory technology strong workforce program outcomes

Strong Workforce Program Metrics: 1205.00 - Medical Laboratory Technology Academic Year 2017-18, unless noted otherwise		California
Unduplicated count of enrolled students (2018-19)		499
Completed 9+ career education units in one year (2018-19)		52%
Perkins Economically disadvantaged students (2018-19)		77%
Students who earned a degree, certificate, or attained apprenticeship (2018-19)		82
Transferred to a four-year institution (transfers)		12
Job closely related to the field of study (2016-17)		85%
Median annual earnings (all exiters)		\$50,524
Median change in earnings (all exiters)		50%
Attained a living wage (completers and skills-builders)		69%

Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

Exhibit 11 displays awards reported by other postsecondary educational providers in the Inland Empire/Desert Region in clinical laboratory science/medical technology/technologist (CIP 51.1005) programs. Completion data is compiled from the Integrated Postsecondary Education Data System (IPEDS) for the most recent three years available. On average, one other postsecondary education institution issued 18 awards annually. Due to IPEDS reporting limitations, it is assumed that each award represents a qualified worker since it is unknown if students are earning multiple awards from this program.

Exhibit 11: Other educational providers clinical laboratory science/medical technology/technologist programs, three-year annual average credentials in the Inland Empire/Desert Region

51.1005 – Clinical Laboratory Science/Medical Technology/Technologist	Bachelor's degree	Other Educational Providers Annual Average Credentials, Academic Years 2016-19
Loma Linda University	18	18
Total	18	18

Source: IPEDS

Demand for Medical Laboratory Technicians in Riverside County

In 2020, there were 867 clinical laboratory technologist and technician jobs in Riverside County, or about 46% of the clinical laboratory tech jobs in the region. This occupation is projected to have 85 annual job openings to fill new or backfill jobs that workers are permanently vacating (includes occupational transfers and retirements). Clinical laboratory technologist and technician employment is expected to increase by 18% through 2025. Exhibit 12 displays the job counts, five-year projected job growth, job openings, and the share of incumbent workers age 55 years and greater.

Exhibit 12: Five-year projections, 2020-2025

2020 Jobs	2025 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
867	1,026	18%	425	85	23%

Source: Emsi 2021.3

Exhibit 13 shows the number of job ads posted during the last 12 months in Riverside County and the regional and statewide average time fill. During the previous 12 months, 42 job advertisements for clinical laboratory technologists and technicians were posted in the college area. On average, employers in Riverside County fill online job advertisements for clinical laboratory technologists and technicians within 31 days. The time to fill in Riverside County is slightly longer than the regional time to fill, indicating employers in Riverside County may face slightly more challenges filling open positions than other employers in the Inland Empire/Desert Region.

Exhibit 13: Job ads and time to fill

Job Ads	Riverside County Average Time to Fill (Days)	Regional Average Time to Fill (Days)	Statewide Average Time to Fill (Days)
42	31	29	32

Source: Burning Glass – Labor Insights

Exhibit 14 displays the employers that posted multiple job ads during the last 12 months in Riverside County. Displaying employer names provides some insight into where students may find employment after completing a program. CSL Plasma posted the most advertisements in Riverside County, accounting for 19% of job ads.

Exhibit 14: Employers posting the most job ads for clinical laboratory technologists and technicians in Riverside County

Top Employers	Job Ads
CSL Plasma	8
Healthcare Traveler Allied Health	6
Riverside Community Hospital	4
Inland Valley Medical Center	4
All other employers	20

Top Employers	Job Ads
Total	42

Source: Burning Glass – Labor Insights

Recommendation for Medical Laboratory Technology Programs

Clinical laboratory technologists and technicians are expected to have 163 annual job openings and increase employment by 13% over the next five years in the Inland Empire/Desert Region. The median hourly earnings for this occupation surpass the \$24.36 per hour self-sustainability rate, indicating that half the workers in the field earn a self-sustainable wage.

Regional community colleges do not currently offer medical laboratory technology (1205.00) programs. On average, other postsecondary educational institutions in the region have issued 18 awards annually. The median annual earnings for medical laboratory technology program completers in the state is \$50,524.

The Centers of Excellence recommends developing a medical laboratory technology program to meet the need for more qualified workers in the region. In addition, colleges considering this program should partner with applicable employers to document the skills and certifications needed for medical laboratory technology students to earn self-sustainable earnings after exiting the program.

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Appendix: Methodology

Community college student outcome information is from LaunchBoard and based on the selected TOP code and region. These metrics are based on records submitted to the California Community Colleges Chancellor's Office Management Information Systems (MIS) by community colleges, which come from self-reported student information from CCC Apply and the National Student Clearinghouse. Employment and earnings metrics are sourced from records provided by California's Employment Development Department's Unemployment Insurance database. When available, outcomes for completers are reported to demonstrate the impact that earning a degree or certificate can have on employment and earnings. For more information on the types of students included for each metric, please see the web link for LaunchBoard's Strong Workforce Program Metrics Data Element Dictionary in the References section (LaunchBoard, 2021 a). Finally, employment in a job closely related to the field of study comes from self-reported student responses on the CTE Employment Outcomes Survey (CTEOS), administered by Santa Rosa Junior College (LaunchBoard, 2021 a).

Job advertisement data is limited to the information provided by employers and the ability of artificial intelligence search engines to identify this information. Additionally, preliminary calculations by Georgetown Center on Education and the Workforce found that "just 30 to 40 percent of openings for candidates with some college or an associate degree, and only 40 to 60 percent of openings for high school diploma holders appear online" (Carnevale et al., 2014). Online job advertisements often do not reveal employers' hiring intentions; it is unknown if employers plan to hire one or multiple workers from a single online job ad or collect resumes for future hiring needs. A closed job advertisement may not be the result of a hired worker.

Table 1. 2020 to 2025 job growth, wages, entry-level education, training, and work experience required for clinical laboratory technologists and technicians in the Inland Empire/Desert Region (Riverside and San Bernardino counties combined)

Occupation (SOC)	2020 Jobs	5-Year Change (New Jobs)	5-Year % Change (New Jobs)	Annual Openings (New + Replacement Jobs)	Entry-Experienced Hourly Wage (10 th to 90 th percentile)	Median Hourly Wage (50 th percentile)	Average Annual Earnings	Entry-Level Education & On-The-Job-Training	Work Experience Required
Clinical Laboratory Technologists and Technicians (29-2018)	1,871	251	13%	163	\$16.32 to \$48.67	\$24.77	\$59,400	Bachelor's degree & None	None

Source: Emsi 2021.3

Table 2. 2020 to 2025 job growth, wages, entry-level education, training, and work experience required for clinical laboratory technologists and technicians in Riverside County

Occupation (SOC)	2020 Jobs	5-Year Change (New Jobs)	5-Year % Change (New Jobs)	Annual Openings (New + Replacement Jobs)	Entry-Experienced Hourly Wage (10 th to 90 th percentile)	Median Hourly Wage (50 th percentile)	Average Annual Earnings	Entry-Level Education & On-The-Job-Training	Work Experience Required
Clinical Laboratory Technologists and Technicians (29-2018)	867	159	18%	85	\$16.41 to \$48.96	\$24.91	\$59,800	Bachelor's degree & None	None

Source: Emsi 2021.3