**Electrocardiography Technician Occupations**

**Labor Market Information Report**

**City College of San Francisco**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

September 2020

# Recommendation

Based on all available data, there appears to be an undersupply of Electrocardiography Technician workers compared to the demand for this cluster of occupations in the Bay region. There is a projected annual gap of about 35 students in the Bay region. Since City College of San Francisco is the only community college in the region issuing awards on TOP 1215.00-Electrocardiography, regional occupational demand is compared to regional supply for this gap analysis. There have also been a large number of job postings in the region for Cardiovascular Technologists and Technicians (1,382) over the past 12 months which indicates demand for the occupation.

This report also provides student outcomes data on employment and earnings for TOP 1215.00-Electrocardiography programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at City College of San Francisco (CCSF) and in the region.

# Introduction

This report profiles Electrocardiography Technician Occupations in the 12 county Bay region and in the Mid-Peninsula sub-region for a proposed new program at City College of San Francisco.

|  |
| --- |
| * **Cardiovascular Technologists and Technicians (29-2031):** Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary functions, lung capacity, and similar tests. Includes vascular technologists. |
| Entry-Level Educational Requirement: Associate's degree |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 60% |

**Occupational Demand**

**Table 1. Employment Outlook for Electrocardiography Technician Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2019 Jobs | 2024 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Cardiovascular Technologists and Technicians | 1,188 | 1,229 | 42 | 4% | 384 | 77 | $23.54 | $32.74 |

*Source: EMSI 2020.3*

**Bay Region includes:** Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

**Table 2. Employment Outlook for Electrocardiography Technician Occupations in Mid-Peninsula Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2019 Jobs | 2024 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Cardiovascular Technologists and Technicians | 335 | 346 | 11 | 3% | 105 | 21 | $22.80 | $30.31 |

*Source: EMSI 2020.3*

**Mid-Peninsula Sub-Region includes:** San Francisco and San Mateo Counties

### Job Postings in Bay Region and Mid-Peninsula Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (Sept 2019 - Aug 2020)**

| Occupation | Bay Region | Mid-Peninsula Sub-Region |
| --- | --- | --- |
| Cardiovascular Technologists and Technicians | 1,382 | 340 |

*Source: Burning Glass*

**Table 4a. Top Job Titles for Electrocardiography Technician Occupations for latest 12 months (Sept 2019 - Aug 2020) Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Bay | Common Title | Bay |
| Behavior Technician | 66 | Cardiovascular Technician | 12 |
| Cath Laboratory Technician | 56 | Cardiac Cath Laboratory Technician | 12 |
| Aba Behavior Technician/Registered Behavior Technician Rbt | 55 | Cardiovascular Technologist | 11 |
| Cvor Cst/St, Cardiovascular | 45 | Rvt | 10 |
| Monitor Technician | 44 | Imaging - Cardiac Cath Laboratory Technologist | 10 |
| Echo Technician Travel | 44 | Ekg Technician | 10 |
| Echo Technician | 32 | Computed Tomography Technologist | 10 |
| Registered Behavior Technician Rbt | 28 | Behavior Technician Sf | 10 |
| Travel Echo Technician | 15 | Ultrasound Gen/Vascular | 9 |
| Behavior Technician Bay | 13 | Technician Trainee | 9 |
| Travel Vascular Interventional Technician | 12 | Non-Invasive Cardiology | 9 |
| Perfusionist | 12 | Behavior Technician Bt/Rbt | 9 |
| Invasive Cardiovascular Specialist - Grade | 12 | Monitor Technician Prn | 8 |
| Cath Laboratory Technologist | 12 | General Cardiology In | 8 |

**Table 4b. Top Job Titles for Electrocardiography Technician Occupations for latest 12 months (Sept 2019 - Aug 2020) Mid-Peninsula Sub-Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Mid-Peninsula | Common Title | Mid-Peninsula |
| Behavior Technician | 16 | Registered Behavior Technician Rbt | 4 |
| Monitor Technician | 13 | Pulmonary Medicine Physician General Pulmonologist - Physician Only | 4 |
| Cath Laboratory Technician | 13 | Perfusionist Surgical Services | 4 |
| Cardiovascular Technologist | 11 | General Cardiology In | 4 |
| Echo Technician Travel | 10 | Ekg Monitoring Technician Trainee | 4 |
| Behavior Technician Sf | 10 | Echo Technician | 4 |
| Cvor Cst/St, Cardiovascular | 8 | Cardiac Cath Laboratory Technologist Non Registered Nurse -Critical | 4 |
| Pulmonary Medicine Physician | 6 | X-Ray Technician Radiology/Cardiology In | 3 |
| EKG Technician | 6 | Travel Echo Technician | 3 |
| Telemetry Monitor Technician Per Diem Prn | 5 | Rvt | 3 |
| Pulmonary Function Technician | 5 | Registered Behavior Technician | 3 |
| Invasive Cardiovascular Specialist - Grade | 5 | Monitor | 3 |
| Cardiology | 5 | Med Technician Atria Park Of | 3 |
| Travel Vascular Interventional Technician | 4 | Event Setup Technician | 3 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Electrocardiography Technician Workers in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Industry – 6 Digit NAICS (No. American Industry Classification) Codes | Jobs in Industry (2019) | Jobs in Industry (2024) | % Change (2019-24) | % Occupation Group in Industry (2019) |
| General Medical and Surgical Hospitals (622110) | 609 | 561 | -8% | 51% |
| Hospitals (Local Government) (903622) | 179 | 191 | 7% | 15% |
| Offices of Physicians (except Mental Health Specialists) (621111) | 102 | 103 | 1% | 9% |
| HMO Medical Centers (621491) | 101 | 132 | 31% | 9% |
| Hospitals (State Government) (902622) | 45 | 57 | 27% | 4% |
| Medical Laboratories (621511) | 27 | 35 | 30% | 2% |
| All Other Outpatient Care Centers (621498) | 14 | 19 | 36% | 1% |
| Specialty (except Psychiatric and Substance Abuse) Hospitals (622310) | 12 | 17 | 42% | 1% |
| Freestanding Ambulatory Surgical and Emergency Centers (621493) | 11 | 16 | 45% | 1% |

*Source: EMSI 2020.3*

**Table 6. Top Employers Posting Electrocardiography Technician Occupations in Bay Region and Mid-Peninsula Sub-Region (Sept 2019 - Aug 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employer | Bay | Employer | Bay | Employer | Mid-Peninsula |
| Butterfly Effects | 56 | Adventist Health | 11 | Opya, Inc | 17 |
| Kaiser Permanente | 43 | Regional Medical Center San Jose | 9 | University California | 13 |
| Sutter Health | 27 | Emerging Milestones | 9 | Kaiser Permanente | 12 |
| Opya, Inc | 27 | St Joseph Health | 8 | Dignity Health | 12 |
| Stanford Health Care | 24 | Irhythm Technologies, Inc | 8 | Sutter Health | 11 |
| Dignity Health | 22 | El Camino Health | 8 | Sutter Health Sacramento Sierra Region | 8 |
| Pleasanton Unified School District | 20 | Davey Tree Expert Company | 8 | Irhythm Technologies, Inc | 8 |
| Opya Inc | 18 | Understanding Behavior, Inc | 7 | UC San Francisco Medical Center | 7 |
| Sutter Health Sacramento Sierra Region | 17 | UC San Francisco Medical Center | 7 | Sutter Medical Center | 7 |
| Mwidm Inc | 17 | Palo Alto Foundation Medical Group | 7 | Biotelemetry | 7 |
| Sutter Medical Center | 16 | Honorvet Technologies | 7 | Mwidm Inc | 6 |
| Centria Healthcare | 15 | Good Samaritan Hospital | 7 | Vibra Healthcare | 5 |
| University California | 14 | Brentwood Union School District Northern California | 7 | Opya Inc | 5 |
| Kpg Healthcare | 13 | Biotelemetry | 7 | Kpg Healthcare | 5 |
| Hospital Corporation of America | 13 | Aya Healthcare | 7 | Autism Services | 5 |
| Autism Services | 13 | Amazon | 7 | UnitedHealth Group | 4 |
| East Bay Aba | 12 | Tenet Health System | 6 | Taj Technologies Incorporated | 4 |

*Source: Burning Glass*

# Educational Supply

There is one (1) community college (CCSF) in the Bay Region issuing 42 awards on average annually (last 3 years ending 2018-19) on TOP 1215.00-Electrocardiography.

**Table 7. Community College Awards on TOP 1215.00-Electrocardiography in Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| College | Sub-Region | Certificate Low Unit | Total |
| **San Francisco** | Mid-Peninsula | 42 | 42 |
| **Total Bay Region** | | **42** | **42** |
| **Total Mid-Peninsula Sub-Region** | | **42** | **42** |

# Source: Data Mart

Note: The annual average for awards is 2016-17 to 2018-19.

# Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 77 annual openings for the Electrocardiography Technician occupational cluster and 42 annual (3-year average) awards for an annual undersupply of 35 students.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 1215.00-Electrocardiography**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2017-18 | **Bay**  All CTE Programs | **CCSF**  All CTE Programs | **State** 1215.00 | **Bay** 1215.00 | **Mid-Peninsula** 1215.00 | **CCSF** 1215.00 |
| % Employed Four Quarters After Exit | 74% | 66% | 72% | 71% | 71% | 71% |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $12,765 | $13,561 | $10,386 | $10,386 | $10,386 |
| Median % Change in Earnings | 46% | 25% | 232% | 145% | 145% | 145% |
| % of Students Earning a Living Wage | 63% | 46% | 47% | n/a | n/a | n/a |

*Source: Launchboard Pipeline (version available on (9/22/20)*

# Skills, Certifications and Education

**Table 9. Top Skills for Electrocardiography Technician Occupations in Bay Region (Sept 2019 - Aug 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Skill** | **Postings** | **Skill** | **Postings** | **Skill** | **Postings** |
| Cardiopulmonary Resuscitation (CPR) | 450 | Sterile Procedures / Techniques | 83 | Surgical Technician | 62 |
| Electrocardiogram | 266 | Catheterization | 79 | Hepatitis B | 59 |
| Catheterization Laboratory (CATH LAB) | 218 | Cleaning | 79 | Surgical Instruments | 57 |
| Autism Diagnosis / Treatment / Care | 200 | Repair | 77 | Arrhythmia Diagnosis / Treatment | 55 |
| Cardiology | 190 | Aseptic Technique | 76 | Holter Monitor | 55 |
| Patient Care | 180 | Customer Service | 75 | Medical Terminology | 55 |
| Advanced Cardiac Life Support (ACLS) | 165 | Radiologic Technology | 72 | Surgical Services | 55 |
| Life Support | 149 | Telemetry | 72 | Surgical Technology | 54 |
| Radiology | 145 | Teaching | 70 | Treatment Planning | 53 |
| Behavior Analysis | 127 | Ultrasound | 70 | Medical Assistance | 52 |
| Applied Behavior Analysis | 111 | Pertussis | 69 | Quality Assurance and Control | 52 |
| Developmental Disabilities | 100 | Stress Testing | 66 | Clinical Leadership | 51 |
| Surgery | 92 | X-Rays | 64 | Electrocardiogram (EKG) Interpretation | 51 |
| Customer Contact | 90 | Acute Care | 62 | Interventional Radiology | 49 |
| Scheduling | 90 | Child Development | 62 | Patient Preparation | 49 |

*Source: Burning Glass*

**Table 10. Certifications for Electrocardiography Technician Occupations in Bay Region (Sept 2019 - Aug 2020)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Certification** | **Postings** | **Certification** | **Postings** |
| First Aid CPR AED | 293 | American Registry For Diagnostic Medical Sonography (ARDMS) | 42 |
| Driver's License | 287 | E.K.G. Certification | 41 |
| Basic Cardiac Life Support Certification | 219 | Registered Diagnostic Cardiac Sonographer | 36 |
| Basic Life Saving (BLS) | 211 | Certified Cardiographic Technician | 34 |
| Registered Behavior Technician | 208 | Associate Business Continuity Professional | 29 |
| Advanced Cardiac Life Support (ACLS) Certification | 164 | Certified Clinical Perfusionist | 22 |
| American Registry of Radiologic Technologists (ARRT) Certification | 140 | Board Certified/Board Eligible | 20 |
| Registered Cardiovascular Invasive Specialist | 85 | Certified Compensation Professional (CCP) | 19 |
| Board Certified Behavior Analyst (BCBA) | 77 | Ca License | 19 |
| American Heart Association Certification | 63 | Certified Radiology Technician | 18 |
| Certified Surgical Technician | 59 | Registered Cardiac Electrophysiology Specialist | 15 |
| Registered Vascular Technologist | 48 | Emergency Medical Technician (EMT) | 12 |

*Source: Burning Glass*

**Table 11. Education Requirements for Electrocardiography Technician Occupations in Bay Region**

|  |  |  |
| --- | --- | --- |
| **Education (minimum advertised)** | **Latest 12 Mos. Postings** | **Percent 12 Mos. Postings** |
| High school or vocational training | 481 | 80% |
| Associate Degree | 52 | 9% |
| Bachelor’s Degree or Higher | 70 | 11% |

*Source: Burning Glass*

# Methodology

Occupations for this report were identified by use of skills listed in O\*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCO Data Mart.

# Sources

O\*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard [www.calpassplus.org/Launchboard/](http://www.calpassplus.org/Launchboard/)

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor’s Office MIS system

# Contacts

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