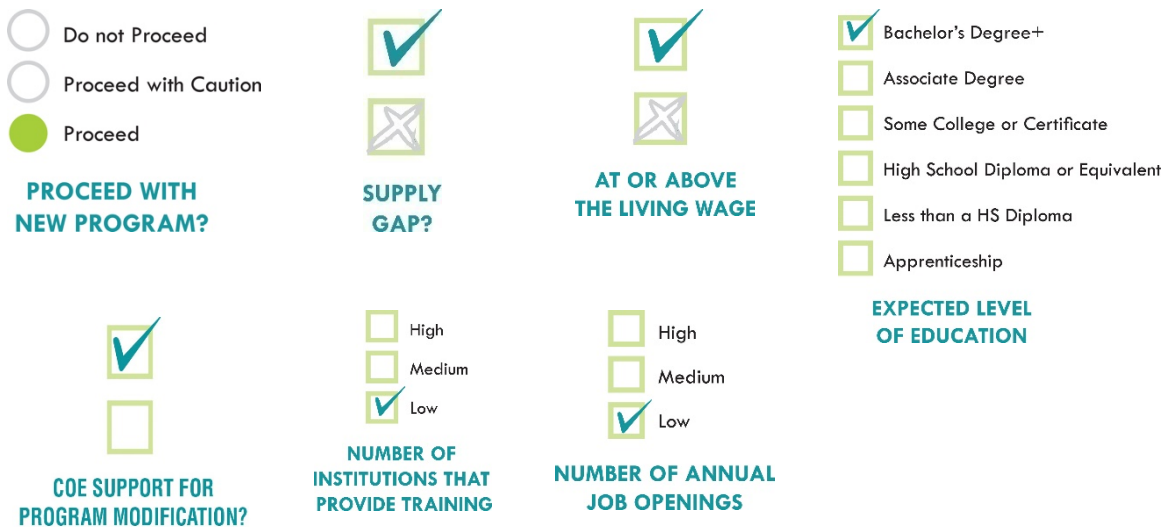


Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other

Labor Market Analysis: San Diego County

January 2021

Summary



The San Diego-Imperial Center of Excellence for Labor Market Research (COE) developed this brief to assist the region's community colleges with strategic planning and program development. According to available labor market information, *Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other* in San Diego County have a labor market demand of 378 annual job openings (while average demand for a single occupation in San Diego County is 277 annual job openings), and an average of 38 online job postings for "Neurodiagnostic Technologists." No educational institutions in San Diego County supply awards for this occupation, suggesting that there is a supply gap in the labor market. Entry-level and median wages for this occupation are above the living wage. This brief recommends proceeding with a new program and a program modification because 1) entry-level and median earnings are above the living wage; 2) no program exists in the region; and 3) a supply gap exists for these positions.

Introduction

This report provides labor market information in San Diego County for the following occupational code in the Standard Occupational Classification (SOC)¹ system:

- **Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other (SOC 29-2098):** Generate radiation treatment plans, develop radiation dose calculations, communicate and supervise the treatment plan implementation, and consult with members of radiation oncology team. Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the healthcare system. Classify medical and healthcare concepts, including diagnosis, procedures, medical services, and equipment, into the healthcare industry's numerical coding system. Includes medical coders.

While this brief primarily focuses on *Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other*, it also provides additional information from online job postings for an occupation that is not commonly analyzed in labor market research.²

- **Neurodiagnostic Technologists (SOC 29-2099.01):** Conduct electroneurodiagnostic (END) tests such as electroencephalograms, evoked potentials, polysomnograms, or electronystagmograms. May perform nerve conduction studies. Sample reported job titles include:
 - Certified Neurodiagnostic Technologist
 - Clinical Supervisor
 - Epilepsy Monitoring Unit
 - Lead Neurodiagnostic Technologist
 - Neurodiagnostic Technologist
 - Registered Polysomnographic Technologist

Neurodiagnostic Technologists can specialize in one or more of the following diagnostic procedures: electroencephalography (EEG), evoked potential (EP), long term monitoring (LTM), polysomnography (PSG), nerve conduction studies (NCS), and intraoperative neuromonitoring (IONM).³ For this report, *Neurodiagnostic Technologists* specialized in electroencephalography (EEG) is analyzed because it is the most frequently performed procedure for the occupation.⁴ *Neurodiagnostic Technologists* specialized in electroencephalography are commonly known as *Electroencephalograph (EEG) Technicians* due to their specialty.

¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc/).

² The Centers of Excellence for Labor Market Research (COE) and other labor market researchers typically analyze six-digit occupational codes from the SOC-O*NET system (ononline.org/help/online/search#code). Six-digit codes are more common and have more data, whereas eight-digit codes are less common and typically have insufficient data to analyze. However, data for eight-digit codes exist in online job postings and were included in this brief.

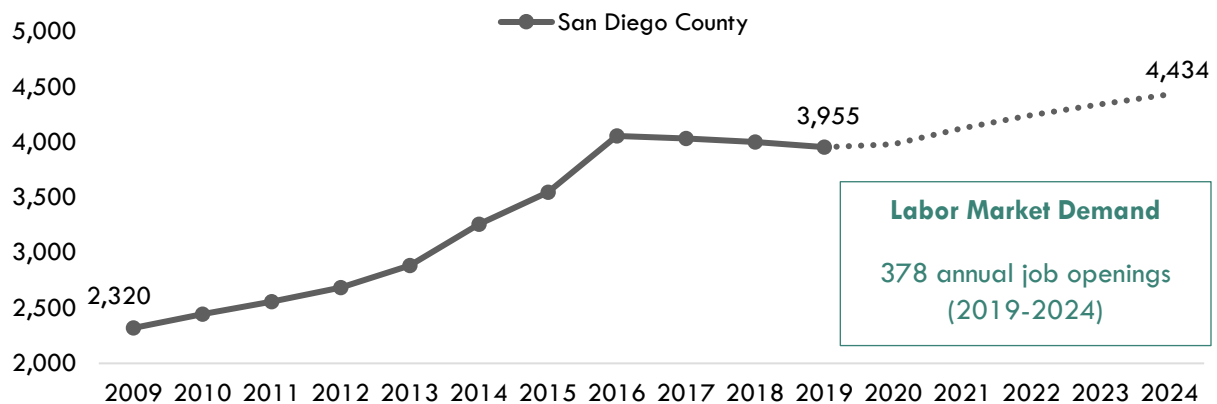
³ Neurodiagnostic Technologist specializations. caahep.org/Students/Program-Info/Neurodiagnostic-Technology.aspx.

⁴ Neurodiagnostic Technologist procedures. aset.org/i4a/pages/index.cfm?pageid=3788.

Projected Occupational Demand

Between 2019 and 2024, *Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other* are projected to increase by 479 net jobs or 12 percent (Exhibit 1). Employers in San Diego County will need to hire 378 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

Exhibit 1: Number of Jobs for *Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other* (2009-2024)⁵



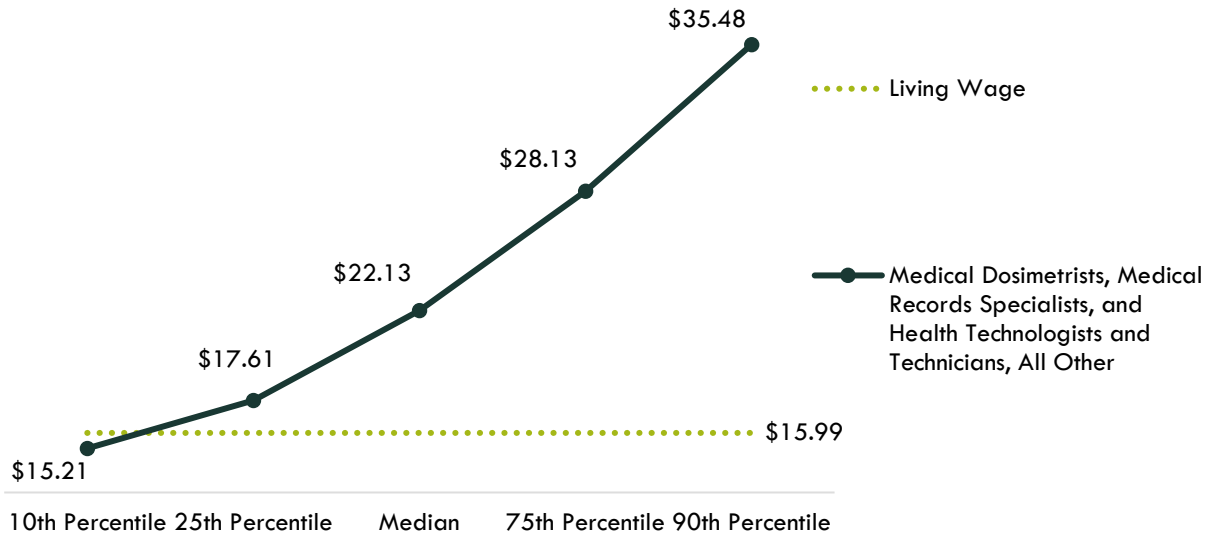
Earnings

Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other receive entry-level hourly earnings of \$17.61; this is more than the living wage for a single adult in San Diego County, which is \$15.99 per hour (Exhibit 2).⁶

⁵ Emsi 2020.04; QCEW, Non-QCEW, Self-Employed.

⁶ "California Family Needs Calculator (formerly the Self-Sufficiency Standard)," Insight: Center for Community Economic Development, last updated 2018. insightccd.org/2018-self-sufficiency-standard.

Exhibit 2: Hourly Earnings⁷ for Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other in San Diego County⁸



Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.⁹ There are **four** TOP codes and **five** CIP codes related to *Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other* (Exhibit 3). Because these TOP and CIP codes train for a variety of Health Care occupations such as “Health Information Specialists,” “Ophthalmic Technologist,” “X-Ray Technician,” etc., there is no one-to-one match between TOP/CIP code and SOC code. As a result, this brief uses a conservative estimate of program supply and only calculates awards from TOP and CIP codes with an asterisk (*) in Exhibit 3.

⁷ 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

⁸ Emsi 2020.04; QCEW, Non-QCEW, Self-Employed.

⁹ TOP data comes from the California Community Colleges Chancellor’s Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data).

Exhibit 3: Related TOP and CIP Codes for Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other

<i>Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other</i>
TOP 121100: Polysomnography
TOP 121200: Electro-Neurodiagnostic Technology*
TOP 121400: Orthopedic Assistant
TOP 121700: Surgical Technician
CIP 51.0806: Physical Therapy Technician/Assistant
CIP 51.0903: Electroneurodiagnostic/Electroencephalographic Technology/Technologist*
CIP 51.0909: Surgical Technology/Technologist
CIP 51.0917: Polysomnography
CIP 51.1099: Clinical/Medical Laboratory Science and Allied Professions, Other

According to TOP data, there are no community colleges or other institutions that supply the region with awards for this occupation (Exhibit 4). However, [San Diego Mesa College](#) is expected to start their Neurodiagnostic Technology Program in Fall 2021.¹⁰

**Exhibit 4: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions
(Program Year 2014-15 through PY2018-19 Average)**

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY16-17 to PY18-19)	Other Educational Institutions 3-Yr Annual Average Awards (PY14-15 to PY16-17)	3-Yr Total Average Supply (PY14-15 to PY18-19)
1212.00	Electro-Neurodiagnostic Technology	0	0	0
51.0903	Electroneurodiagnostic/Electroencephalographic Technology/Technologist	0	0	0
			Total	0

¹⁰ San Diego Mesa College "Neurodiagnostic Technology Program," sdmesa.edu/academics/schools-departments/neurodiagnostic-tech/index.shtml

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply¹¹ suggests that there is a **supply gap** for this occupation in San Diego County, with **378** annual openings and **no** awards. Comparatively, there are **4,071** annual openings in California and **eight** awards, suggesting that there is a supply gap across the state¹² (Exhibit 5).

Exhibit 5: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	378	0	378
California	4,071	8	4,063

Please note: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

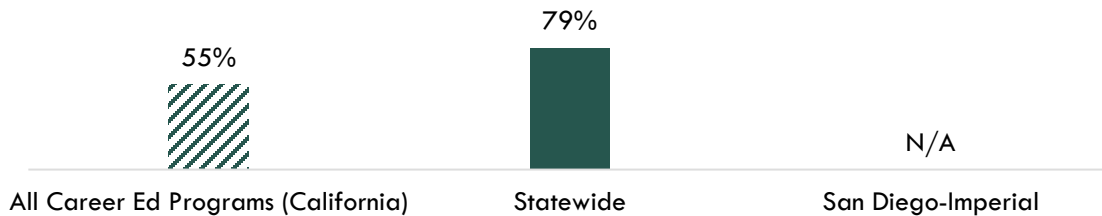
¹¹ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

¹² "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/Supply-and-Demand.aspx.

Student Outcomes and Regional Comparisons

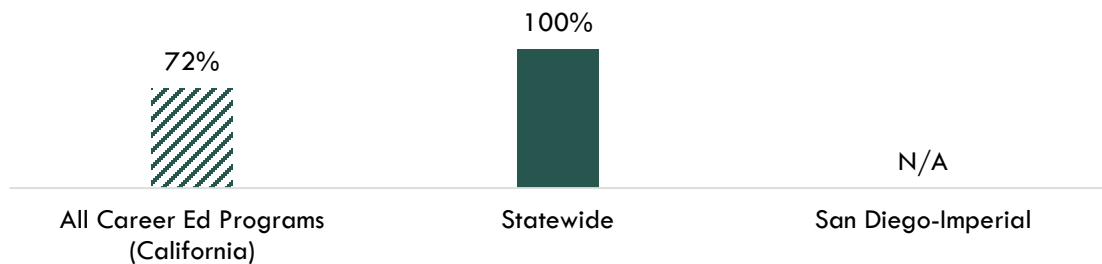
According to the California Community Colleges LaunchBoard, 79 percent of students statewide earned a living wage after completing an Electro-Neurodiagnostic Technology (TOP 1212.00) program, compared to 55 percent of students in Career Education programs in general across the state (Exhibit 6a).¹³

**Exhibit 6a: Proportion of Students Who Earned a Living Wage
(Electro-Neurodiagnostic Technology, PY2017-18)¹⁴**



According to the California Community Colleges LaunchBoard, 100 percent of students statewide obtained a job closely related to their field of study after completing an Electro-Neurodiagnostic Technology program, compared to 72 percent of students in Career Education programs in general across the state (Exhibit 6b).¹⁵

**Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study
(Electro-Neurodiagnostic Technology, PY2016-17)¹⁶**



¹³ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁴ Among completers and skills builders who exited, the proportion of students who attained a living wage.

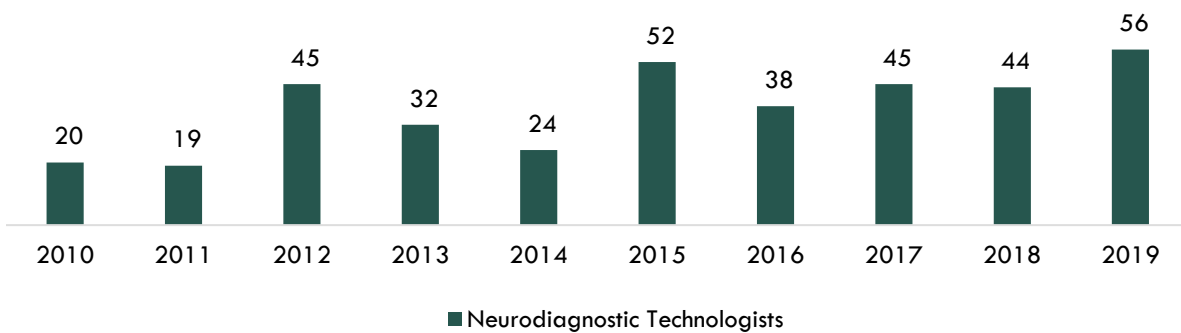
¹⁵ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁶ Most recent year with available data is Program Year 2016-17. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market that are not captured by historical data. Between 2010 and 2019, there was an average of 38 online job postings per year for *Neurodiagnostic Technologists* in San Diego County (Exhibit 7). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (see Exhibit 1). Employers may post a position multiple times for various reasons, such as increasing the pool of applicants, for example.

Exhibit 7a: Number of Online Job Postings for Neurodiagnostic Technologists in San Diego County (2010-2019)



Top Employers

Between January 1, 2018 and December 31, 2020, the top five employers in San Diego County for this occupation were [University of California San Diego](#), [Scripps Health](#), [Sharp Healthcare](#), [Cortica Advanced Neurological Therapies For Autism](#), and [Rady Children's Hospital](#) based on online job postings (Exhibit 8).

Exhibit 8: Top Employers in San Diego County for Neurodiagnostic Technologists¹⁷

Top Employers	
<ul style="list-style-type: none"> University of California San Diego Scripps Health Sharp Healthcare Cortica Advanced Neurological Therapies For Autism Rady Children's Hospital 	<ul style="list-style-type: none"> Tri City Medical Center The Neuron Clinic Providence Health & Services Palomar Health Swedish Health Service

¹⁷ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

Education, Skills and Certifications

Based on online job postings between January 1, 2018 and December 31, 2020 in San Diego County, the top listed educational requirement for *Neurodiagnostic Technologists* is a **bachelor's degree** (Exhibit 9).¹⁸

Exhibit 9: Educational Requirements for Neurodiagnostic Technologists in San Diego County¹⁹

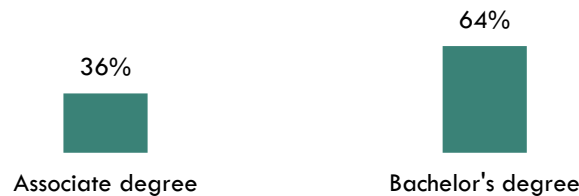


Exhibit 10 lists the top specialized, soft and software skills that appeared in online job postings between January 1, 2018 and December 31, 2020.

Exhibit 10: Top Skills Neurodiagnostic Technologists in San Diego County²⁰

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Electroencephalography • Customer Contact • Patient Preparation • Patient Care • Program Development • Cardiopulmonary Resuscitation • Patient Transportation and Transfer • Neurology • Life Support • Nerve Conduction Velocity • Nondestructive Testing • Advanced Cardiac Life Support • Supply Inventory • Surgery • Electrocardiogram 	<ul style="list-style-type: none"> • Communication Skills • Computer Literacy • English • Problem Solving • Bilingual • Critical Thinking • Spanish • Teamwork / Collaboration • Organizational Skills • Research • Typing • Microsoft Access • Self-Starter • Time Management • Detail-Oriented 	<ul style="list-style-type: none"> • Microsoft Excel • Microsoft PowerPoint • Microsoft Access • Virtual Private Networking • .NET • ASP.NET • AWS Direct Connect • AWS Elastic Compute Cloud • Active Server Pages • AngularJS • Apple Macintosh • Atlassian JIRA • Azure Expressroute • HCPCS Coding • ICD-9-CM Coding

¹⁸ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2017-2019.

¹⁹ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified September 4, 2019. bls.gov/emp/tables/educational-attainment.htm.

²⁰ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

Exhibit 11 lists the top certifications that appeared in online job postings between January 1, 2018 and December 31, 2020.

Exhibit 11: Top 15 Certifications for Neurodiagnostic Technologists in San Diego County²¹

Top Certifications in Online Job Postings

1. Basic Life Saving (BLS)
2. EEG Technologist
3. CEU's Certificate
4. Certification in Neurophysiologic Intraoperative Monitoring
5. First Aid CPR AED
6. Advanced Cardiac Life Support (ACLS) Certification
7. American Heart Association Certification
8. Registered Polysomnographic Technologist
9. Respiratory Care Practitioner (RCP)
10. Registered Cardiovascular Invasive Specialist
11. Registered Respiratory Therapist
12. Certification in Long Term Monitoring
13. Registered Cardiac Electrophysiology Specialist
14. Neonatal Resuscitation Program (NRP)
15. Licensed Practical Nurse (LPN)

²¹ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

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Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

This workforce demand report uses state and federal job projection data that was 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.