

# LABOR MARKET ANALYSIS

FOR PROGRAM RECOMMENDATION



CENTERS OF EXCELLENCE  
FOR LABOR MARKET RESEARCH

## EMERGENCY MEDICAL SERVICE OCCUPATIONS IN THE GREATER SACRAMENTO REGION

North (Greater Sacramento)  
Center of Excellence

November 2023

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# SUMMARY

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The North (Greater Sacramento) of Excellence for Labor Market Research prepared this report to provide a labor market analysis of educational supply and occupational demand for middle-skilled careers in the North (Greater Sacramento) subregion. This report aims to determine if demand in the local labor market is unmet by the supply from existing community college programs and other postsecondary training providers.

This report primarily focuses on training that leads to jobs in middle-skilled occupations - jobs that typically require education beyond a high school diploma but less than a bachelor's degree - but may include higher-skilled occupations for training pathways that lead to a bachelor's degree. Lowered skilled occupations are rarely considered in this analysis due to the lessened barriers for entry-level work, such as no formal education and fewer on-the-job training requirements.

Key findings include:

- The Greater Sacramento subregion held 1,686 emergency medical service jobs in 2022. These jobs are projected to increase by 8% over the next five years, adding 129 new jobs to the subregion by 2027.
- Over the next five years, emergency medical service occupations are projected to have 154 annual job openings in the Greater Sacramento subregion. Most job openings will be for EMTs (119 AJO).
- Analysis of wage data shows that emergency medical service occupations earn an entry-level hourly wage that ranges from \$16.65 for EMTs to \$25.05 for paramedics. (See Appendix B for notes about the updated living wage).
- Awards data analysis shows that North (Greater Sacramento) community colleges conferred an average of 44 awards (certificates and associate degrees) in emergency medical service programs over the last three academic years.

Recommendations include:

- The North (Greater Sacramento) Center of Excellence recommends exercising caution in developing new programs in the emergency medical services career pathway.

# INTRODUCTION

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The North (Greater Sacramento) Center of Excellence (COE) was asked to provide labor market information for a proposed program at a regional community college. This report focuses on the following Standard Occupational Classification (SOC) occupations and codes:

- These middle-skill occupations require more education and training beyond a high school diploma but usually less than a four-year degree:
  - Emergency Medical Technicians (29-2042)
  - Paramedics (29-2043)

A review of related programs revealed the following Taxonomy of Programs (TOP) title(s) and code(s) are appropriate for inclusion in this report:

- Emergency Medical Services (1250.00)
- Paramedic (1251.00)

The corresponding Classification of Instructional Program (CIP) title(s) and code(s) are:

- Emergency Medical Technology/Technician (EMT Paramedic) (51.0904)

# OCCUPATIONAL DEMAND

Exhibit 1 summarizes the five-year projected job growth for the studied occupations in North (Greater Sacramento)<sup>1</sup>, North/Far North, and California.

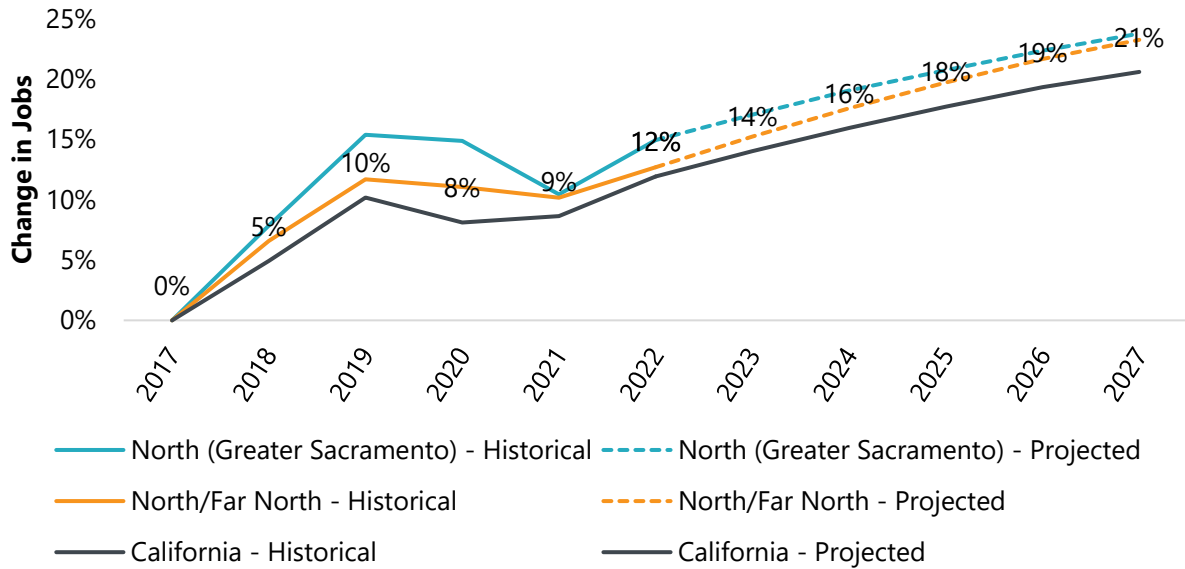
**Exhibit 1. Employment and projected demand, 2022-2027**

Occupation	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	2022-2027 Annual Openings
Emergency Medical Technicians	1,217	1,304	87	7%	119
Paramedics	469	511	42	9%	35
<b>North (Greater Sacramento)</b>	<b>1,686</b>	<b>1,815</b>	<b>129</b>	<b>8%</b>	<b>154</b>
Emergency Medical Technicians	1,599	1,745	146	9%	163
Paramedics	637	701	64	10%	49
<b>North/Far North</b>	<b>2,237</b>	<b>2,446</b>	<b>210</b>	<b>9%</b>	<b>212</b>
Emergency Medical Technicians	18,522	19,870	1,348	7%	1,767
Paramedics	7,142	7,781	639	9%	532
<b>California</b>	<b>25,664</b>	<b>27,652</b>	<b>1,988</b>	<b>8%</b>	<b>2,299</b>

<sup>1</sup> The North (Greater Sacramento) subregion covers seven counties, including El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, and Yuba.

Exhibit 2 compares the net changes in jobs between 2017 through 2022 and the projected changes through 2027. The rate of change is indexed to the total number of jobs in 2017.

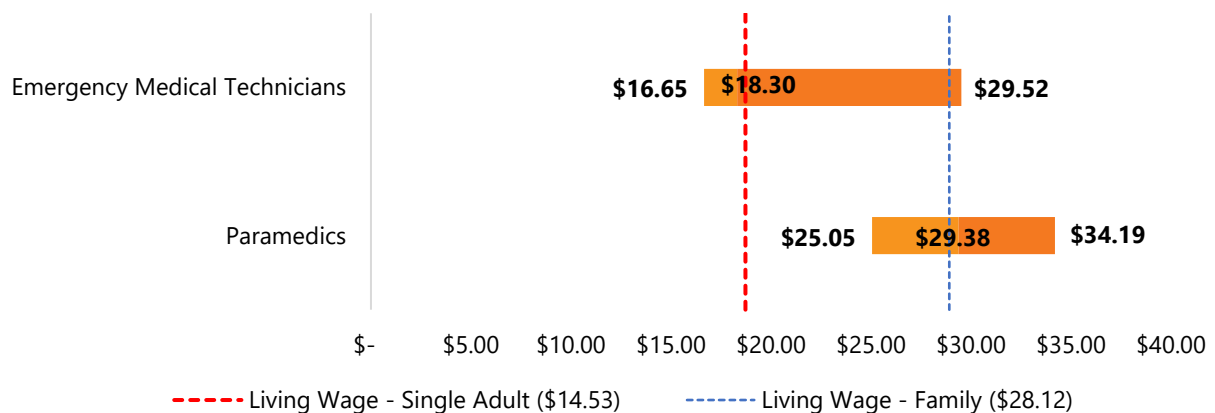
**Exhibit 2. Changes in employment, 2017-2027**



## Wages

Exhibit 3 compares the 25<sup>th</sup> percentile, median, and 75<sup>th</sup> percentile hourly wages for the selected occupations to the Greater Sacramento living wage for one working adult (\$18.72 per hour) and a small family (\$28.91 per hour).<sup>2,3</sup> The 25<sup>th</sup> and 75<sup>th</sup> percentile hourly wages are used to estimate entry-level and experienced worker wages.

**Exhibit 3. Hourly wages by occupation, 2022**



<sup>2</sup> Living wage is defined as the level of income one working adult with no children must earn to meet basic needs, including food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs. Please note that the 25th-percentile and 75th-percentile hourly wages are used as proxy for entry-level and experienced-level wages.

<sup>3</sup> A small family is defined as one working adult and one school aged child (between the ages of 5 and 12 years).

# JOB POSTINGS

## About Job Postings Analysis

This section analyzes recent data from online job postings. Online job postings may provide additional insight into recent changes in the labor market that are not captured by historical trends. However, job postings differ from labor market demand; demand is based on projected annual openings. Job postings should be used to inform community college curriculum development and identify potential employers for targeted experiential learning opportunities.

Please note several limitations to analyzing and interpreting online job postings. Employers may post a position multiple times to increase the number of job applicants. Job postings may remain online after a business chooses not to fill a position. Employers may advertise one posting to fill multiple vacancies. And not all jobs are posted online.

The North COE identified 137 online job postings for the selected occupations in the seven-county Greater Sacramento subregion. Job posting data comes from Lightcast (formerly Emsi Burning Glass) and represents unique advertisements newly posted online during the last 12 months, from November 2022 through October 2023.

## Top Employers and Job Titles

Exhibit 4 details the number of online job postings for the selected occupations.

### Exhibit 4. Job postings by occupation

Occupation	Unique Job Postings	Share of Job Postings
Emergency Medical Technicians	85	62%
Paramedics	52	38%
<b>Total Job Postings</b>	<b>137</b>	<b>100%</b>

Exhibit 5 shows the top 10 relevant job titles with the most job postings.

### Exhibit 5. Top jobs titles

Job Title	Number of Job Postings
Emergency Medical Technicians	48
Paramedics	39

Job Title	Number of Job Postings
Emergency Medical Technicians - Basic	17
Flight Paramedics	7
Emergency Department Technicians	6
Emergency Medical Technologies (EMT)/Paramedics Adjunct Assistant Professor Pool	4
First Responders	2
Critical Care Flight Paramedics	2
Emergency Medical Responders	2
First Aid Responders	1

Exhibit 6 shows the top 10 relevant employers with the most job postings for the selected occupations.

#### Exhibit 6. Top Employers

Employer	Number of Job Postings
Pro-Transport	13
Global Medical Response	13
Norcal Ambulance	9
CommonSpirit Health	9
Medic Ambulance Service	5
Remsa	5
Los Rios Community College District	4
AMR	4
Sierra Nevada Memorial Hospital	4
Work Health Solutions	3

## Top Skills and Qualifications

Exhibit 7 shows the most relevant certifications requested by employers for the selected occupations.

### Exhibit 7. Most in-demand certifications

Certification	Job Postings
Emergency Medical Technician (EMT)	80
Basic Life Support (BLS) Certification	72
Paramedic (EMT-P)	44
Advanced Cardiovascular Life Support (ACLS) Certification	39
Pediatric Advanced Life Support (PALS)	38

Exhibit 8 shows the top 10 skills across three categories for the studied occupations: specialized, essential, and software skills.<sup>4</sup>

### Exhibit 8. Most in-demand skills

Specialized Skills	Common Skills	Software Skills
Cardiopulmonary Resuscitation (CPR)	Customer Service	Proprietary Software
Emergency Medical Services	Communications	Clinic Management Systems
Ambulances	Operations	Java Virtual Machine (JVM)
Critical Care	Good Driving Record	Cerner EHR
Emergency Departments	Professionalism	Spreadsheets
Electrocardiography	Lifting Ability	--
Triage	Management	--
Emergency Medicine	First Aid	--
Medical Equipment	Compassion	--

<sup>4</sup> Specialized skills are those primarily required to perform specific tasks in an occupation. Essential skills are typically related to employability. These are skills that are prevalent across many occupations, and include both interpersonal attributes and learned skills (aka "soft skills"). Software skills are specific to any software tool or programming component used to support a job.

Specialized Skills	Common Skills	Software Skills
Defibrillation	Physical Stamina	--

Exhibit 9 shows the minimum education level preferred by employers for related job postings in the Greater Sacramento subregion.<sup>5</sup>

**Exhibit 9. Employer-preferred education**

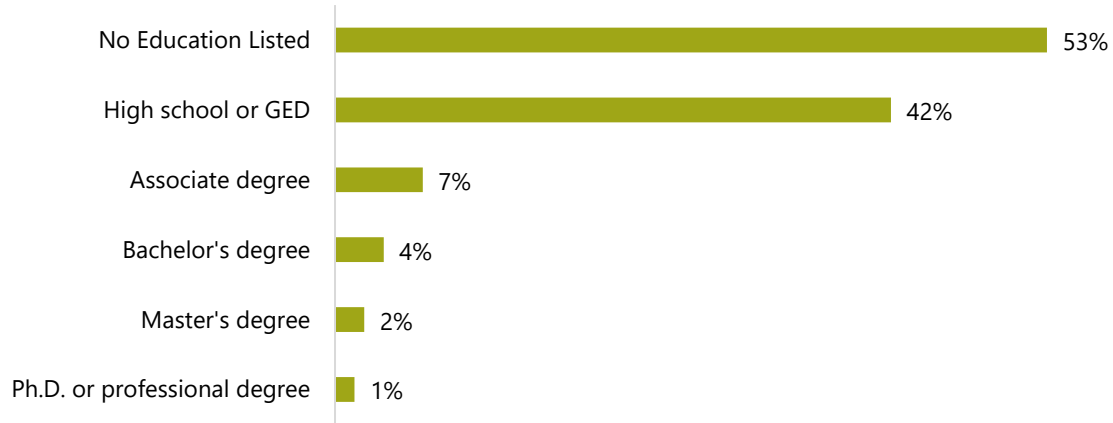
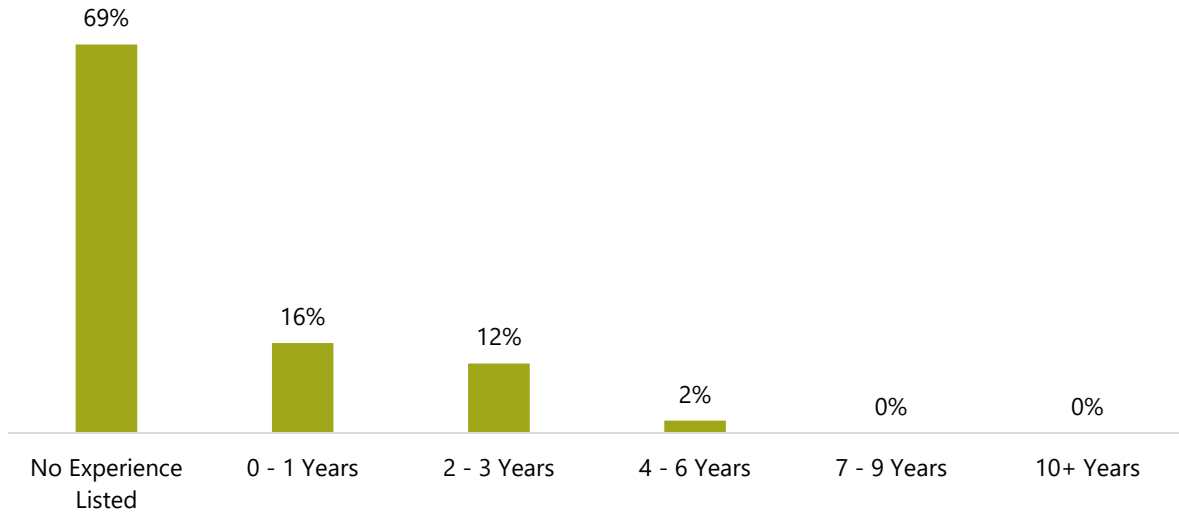


Exhibit 10 shows the minimum level of experience employers prefer for related job postings in the Greater Sacramento subregion.<sup>6</sup>

**Exhibit 10. Employer-preferred job experience**



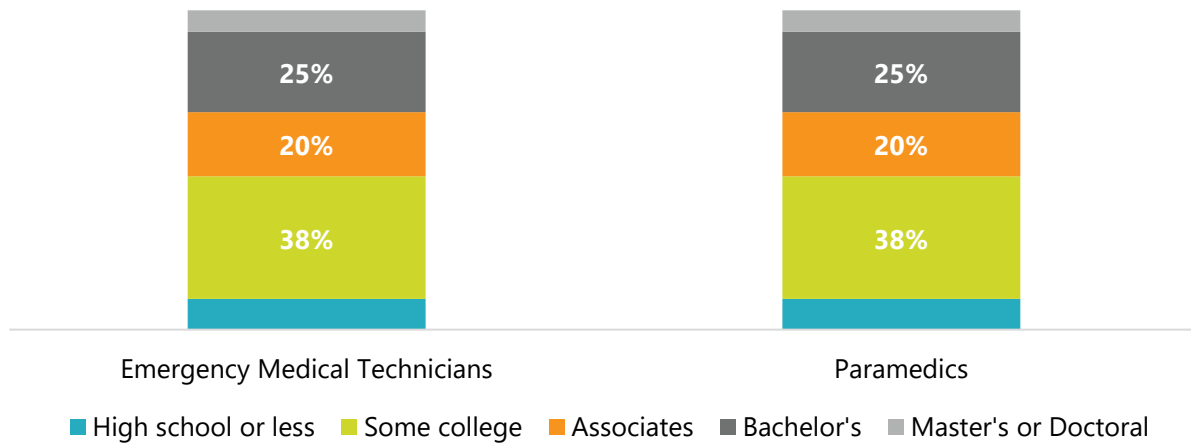
<sup>5</sup> Employers may include more than one level of education as a hiring requirement in a job posting. As a result, the values in exhibit 9 may sum to greater than 100%.

<sup>6</sup> Employers may include more than one level of experience as a hiring requirement in a job posting. As a result, the values in exhibit 10 may sum to greater than 100%.

# EDUCATION AND TRAINING REQUIREMENTS

The U.S. Census Bureau collects data on the highest education level achieved by workers across all occupations. Exhibit 11 shows California's educational attainment of the current workforce in the selected occupations.

**Exhibit 11. California educational attainment for selected occupations, 2019**



The U.S. Bureau of Labor Statistics (BLS) uses a categorical system to assign typical entry-level education and job requirements to each occupation for which the BLS publishes projection data. These categories include entry-level education, work experience in a related occupation, and on-the-job training. Exhibit 12 shows the selected occupations' typical entry-level job requirements.

**Exhibit 12. Typical entry-level job requirements**

Occupation	Entry-level Education Requirements	Work Experience Requirements	On-The-Job Training Requirements
Emergency Medical Technicians	Postsecondary nondegree award	None	None
Paramedics	Postsecondary nondegree award	None	None

## EDUCATIONAL SUPPLY

Educational supply for an occupation can be estimated by analyzing the number of awards issued in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. Exhibit 13 shows the TOP and CIP codes for educational programs related to the selected occupations.

**Exhibit 13. TOP and CIP codes for training programs related to the selected occupations**

TOP Programs and Codes	Aligned CIP Programs and Codes
Emergency Medical Services (1250.00)	Emergency Medical Technology/Technician (EMT Paramedic) (51.0904)
Paramedic (1251.00)	

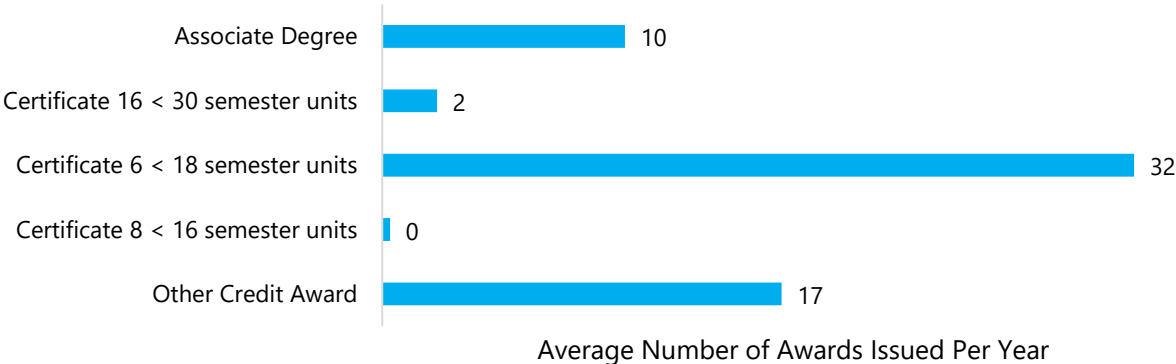
### Community College Supply

Exhibits 14 and 15 compare the average number of certificates and degrees from selected Greater Sacramento community college programs over the last three academic years.

**Exhibit 14. Annual average community college awards by program**

Program - TOP Code	College	Annual Awards 2020-21	Annual Awards 2021-22	Annual Awards 2022-23	3-Yr Annual Awards Average
Emergency Medical Services (1250.00)	American River	22	25	0	16
	Cosumnes River	1	0	0	0
	Folsom Lake	0	1	0	0
	Sierra	24	5	26	18
	<b>Subtotal</b>	<b>47</b>	<b>31</b>	<b>26</b>	<b>34</b>
Paramedic (1251.00)	American River	8	9	4	7
	Sierra	2	0	6	3
	<b>Subtotal</b>	<b>10</b>	<b>9</b>	<b>10</b>	<b>10</b>
	<b>Grand Total</b>	<b>57</b>	<b>40</b>	<b>36</b>	<b>47</b>

**Exhibit 15. Annual average community college awards by type, 2019-20 through 2021-22**



**Other Postsecondary Supply**

Exhibit 16 compares the average number of degrees that non-community college training providers conferred in the Greater Sacramento subregion over the last two academic years. Please note that non-community college data often lags by one year, and other postsecondary awards data covers a two-year average due to taxonomy updates from the 2010 to 2020 CIP codes.

NCTI Roseville and CSU Sacramento offer training for EMTs and Paramedics; however, recent completion data is unavailable.

**Exhibit 16. Other postsecondary awards by program**

Program - CIP Code	Provider	Annual Awards 2019-20	Annual Awards 2020-21	2-Yr Annual Awards Average
Emergency Medical Technology/Technician (EMT Paramedic) (51.0904)	CSU Sacramento	Unk.	Unk.	Unk.
	<a href="#">NCTI Roseville</a>	Unk.	Unk.	Unk.
	<b>Grand Total</b>	<b>Unk.</b>	<b>Unk.</b>	<b>Unk.</b>

# FINDINGS

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This report focuses on two occupations in the emergency medical services career pathway: emergency medical technicians and paramedics.

## *Occupational Demand*

- The Greater Sacramento subregion held 1,686 emergency medical service jobs in 2022. These jobs are projected to increase by 8% over the next five years, adding 129 new jobs to the subregion by 2027.
  - Most emergency medical services jobs were for emergency medical technicians (or EMTs) (1,217 jobs in 2022).
  - Jobs for paramedics are projected to grow faster than those for EMTs (9% vs 7%, respectively).
- Emergency medical service jobs are projected to grow at the same rate in the Greater Sacramento subregion as in California.
- Over the next five years, emergency medical service occupations are projected to have 154 annual job openings in the Greater Sacramento subregion. Most job openings will be for EMTs (119 AJO).

## *Wages*

- Analysis of wage data shows that emergency medical service occupations earn an entry-level hourly wage that ranges from \$16.65 for EMTs to \$25.05 for paramedics. Entry-level hourly wages for EMTs are below the single working adult living wage of \$18.72 per hour.
- Wages are highest for paramedics, which aligns with the additional training and scope of practice required of paramedics.

## *Job Postings*

- In the last 12 months, there were 137 online job postings for emergency medical service occupations. Sixty-two percent of job postings were for EMTs (n = 85), while the remaining were for paramedics (n = 52).
- While 42% of job postings listed a high school diploma as the most desired level of education, another 7% listed an associate degree as the preferred level of education by local employers.
- Job postings requiring graduate degrees (master's and above) are connected to the American Heart Association and Los Rios Community College District.

## *Education and Training Requirements*

- Approximately 58% of incumbent workers in the studied occupations have educational attainment levels consistent with community college offerings (some college or associate degrees). Another 25% of workers in these occupations hold a bachelor's degree.

*Postsecondary Supply*

- Four Greater Sacramento community colleges offer degrees and certificates in programs related to emergency medical services. These programs conferred an average of 44 awards (certificates and associate degrees) in EMT and paramedic training programs over the last three academic years (2019-20 through 2021-22).
- Two local institutions also offer training related to emergency medical services: CSU Sacramento and NCTI Roseville. However, recent completion data for these programs is not available.

## RECOMMENDATIONS

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- Based on a comparison of annual openings to average annual awards in the Greater Sacramento subregion, there seems to be an undersupply of workers for EMT and paramedic jobs.
  - Community colleges issued an average of 44 awards over the last three years.
  - There are 154 projected annual openings for emergency medical service occupations.
- Recent completion data from other postsecondary training providers is unavailable, so educational supply may be understated, leading to overestimating demand for workers in these careers.
- The North (Greater Sacramento) Center of Excellence recommends exercising caution in developing new programs in the emergency medical services career pathway. Since the supply of awards from non-community college programs is unknown, the actual supply gap is also unknown.

New Program Recommendation		
<b>Move forward with the new program</b>	<b>Proceed with caution</b>	<b>A new program is not recommended</b>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## APPENDIX A. METHODOLOGY AND SOURCES

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This report identified Occupations using the Center of Excellence TOP-to-CIP-to-SOC crosswalk and O\*Net OnLine. This report's findings were determined using labor market data from the Bureau of Labor Statistics (BLS), U.S. Census Bureau data from Emsi, and jobs posting data from Burning Glass.

"The Chancellor's Office Curriculum Inventory System (COCI)." California Community Colleges Curriculum Inventory (COCI), 2023. <https://coci2.ccctechcenter.org/>.

Glasmeier, Amy K. "Living Wage Calculator." Living Wage Calculator, 2023. <https://livingwage.mit.edu/>.

Integrated Postsecondary Education Data System (IPEDS). National Center for Education Statistics. U.S. Department of Education. <https://nces.ed.gov/ipeds/>.

Labor Market Information Division. California Employment Development Department. <https://labormarketinfo.edd.ca.gov/>.

Lightcast (Formerly EMSI/Burning Glass) 2023.3; QCEW Employees, Non-QCEW Employees, and Self-Employed. <https://www.economicmodeling.com/>. (Note: EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors)).

Management Information Systems (MIS) Data Mart. California Community Colleges Chancellor's Office. <https://datamart.cccco.edu/>.

O\*NET OnLine. U.S. Department of Labor/Employment and Training Administration (DOL ETA). <https://www.onetonline.org/>.

Self-Sufficiency Standard Tool for California. The University of Washington. <http://www.selfsufficiencystandard.org/>

"Taxonomy of Programs." California Community Colleges Chancellor's Office. June 2012, 6<sup>th</sup> Edition. <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Educational-Services-and-Support/Academic-Affairs/What-we-do/Curriculum-and-Instruction-Unit/Files/TOPmanual6200909corrected12513pdf.ashx>

"TOP-CIP-SOC Crosswalk." Centers of Excellence for Labor Market Research. June 2021 Edition. <http://coecc.net/>

## APPENDIX B. GLOSSARY

Key Terms	Definition
<b>Occupation</b>	<p>Occupation refers to a category of jobs, careers, or professions that are similar regarding the work performed and the skills the workers possess. Workers who perform essentially the same tasks are in the same occupation, whether in the same industry. Some occupations are concentrated in a few industries, while others are found in many industries.</p> <p>Occupations differ from jobs in that jobs show the number of positions held in each occupation.</p>
<b>Jobs</b>	<p>A job is a specific instance of employment and includes any position where a worker provides labor for monetary compensation.</p> <p>Job numbers include employees (those who work for businesses) and proprietors (those who work for themselves). Full- and part-time jobs are included and counted equally (i.e., not adjusted to full-time equivalents). Data for jobs, or employment, are annual averages.</p>
<b>Employment</b>	<p>Employment refers to filled jobs, whether full- or part-time, temporary or permanent. The scope of "who" is counted as employed is noted in Appendix A. Methodology and Sources.</p>
<b>Job Change</b>	<p>Job change is the net increase or decrease of jobs over a given timeframe.</p>
<b>Job Opening</b>	<p>Job openings are the projected number of positions available for workers entering an occupation.</p> <p>Openings include growth and replacement job counts. Growth job counts are the positive change in the total number of workers employed. Replacement job counts are the estimates of new workers needed to replace workers permanently leaving the occupation.</p>
<b>Percentile Wage (or wages)</b>	<p>A percentile wage is the value of a wage at which a certain percentage of workers falls below. For example, a 25<sup>th</sup> percentile hourly wage of \$15.00 indicates that 25% of workers earn less than \$15.00, while 75% earn more. Percentile wages are specific to the geography shown in the report.</p> <p>The 25th-percentile and 75th-percentile hourly wages are used as a proxy for entry-level and experienced-level wages.</p>
<b>Living Wage</b>	<p>The living wage is the level of income a single, working adult with no children must earn to meet basic needs. The living wage is calculated using basic allowances for food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs and assumes full-time employment (40 hours per week, 52 weeks a year).</p>

Key Terms	Definition
	Beginning in 2023-24, NFN COE adopted the MIT calculations for a living wage better aligned to the economic conditions following the pandemic. For additional information, please visit <a href="https://livingwage.mit.edu/">https://livingwage.mit.edu/</a> .
<b>Educational Attainment</b>	Educational attainment is the highest level of education achieved by workers in an occupation. The data include workers aged 25 years and older.
<b>Typical Entry-level Education</b>	<p>The education level most workers need to gain employment in an occupation. Categories range from "no formal educational credential" and "high school diploma or equivalent" to "doctoral or professional degree." The types most relevant to community training are "some college, no degree," "postsecondary nondegree award," and "associate degree."</p> <p>The typical entry-level education may differ from the actual educational levels attained by workers employed in an occupation.</p>
<b>Typical Work Experience</b>	A worker needs relevant prior experience to gain employment in an occupation. Categories include "5 years or more", "less than five years," and "none."
<b>Typical On-The-Job (OTJ) Training</b>	The level of on-the-job training a worker needs to obtain for competency in the skills required for an occupation. Categories include "none," "short-term (1 month or less)," "moderate-term (more than one month but less than 12 months)," "long-term (more than 12 months)," "apprenticeship," and "internship/residency."
<b>Awards</b>	Awards are the number of certificates and degrees conferred for a specific course of study each year. Awards count "papers" and, as a result, may be greater than the number of students who complete a program.

**Funding Acknowledgement:** This report was made available with Strong Workforce Program funding from the North Far North Regional Consortium.

**COVID-19 Statement:** This report includes employment projection data produced by Lightcast (formerly EMSI). Employment projections are developed using models based on historical data, which in this set of projections covers the period through 2021. Most input data, therefore, precedes the pandemic. Employment projections are long-term projections intended to capture structural changes in the economy, not cyclical fluctuations. As such, projections data are not intended to capture the impacts of the recession that began in February 2020. Cyclical fluctuations, like recessions, impact projections when they become part of the historical data set.

**Important Disclaimer:** 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. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges, or their representatives based upon components or recommendations contained in this study.

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Centers of Excellence for Labor Market Research, Economic and  
Workforce Development Program



CENTERS OF EXCELLENCE  
FOR LABOR MARKET RESEARCH

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