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Labor Market Analysis

Sonography

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Prepared by the Central Valley/Mother Lode Center of Excellence

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Summary

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for Sonography. One occupation related to Sonography was identified for Porterville College:

- 29-2032, Diagnostic Medical Sonographers

Key findings:

- **Occupational demand —** There were 441 workers employed in jobs related to Sonography in 2020 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. Diagnostic medical sonographers have 441 workers, a projected growth rate of 32% over the next five years, and 66 annual openings.

- **Wages —** Diagnostic medical sonographers earn the highest entry-level wage, $36.45/hour in the subregion.

- **Employers —** Employers with the most job postings in the subregion are Adventist Health, Community Health System, and Radnet.

- **Occupational titles —** The most common occupational title in job postings in the subregion is Diagnostic Medical Sonographers. The most common job title is Ultrasound Technician.

- **Skills and certifications —** The top baseline skill is communication skills, the top specialized skill is ultrasound, and the top software skill is Microsoft Excel. The most in-demand certification is an American Registry For Diagnostic Medical Sonography (ARDMS).

- **Education —** An associate degree is typically required for diagnostic medical sonographers.

- **Supply —** Analysis of postsecondary completions shows that on average 21 awards were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and supply, there is an undersupply of 50 trained workers in the subregion and 80 workers in the region. The Center of Excellence recommends that Porterville College work with the regional directors, the college's advisory board, and local industry in the development of programs to address the shortage of Sonography workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Porterville College to provide labor market information for Sonography. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. The average living wage for a single adult in the SCV/SML subregion is $11.91/hour.[1] Analysis of the program and occupational data related to Sonography resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 29-2032, Diagnostic Medical Sonographers

The occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O*NET OnLine are shown below.

Diagnostic Medical Sonographers
Job Description: Produce ultrasonic recordings of internal organs for use by physicians. Includes vascular technologists.
Knowledge: Customer and Personal Service, English Language, Physics, Medicine and Dentistry, Administrative
Skills: Active Listening, Reading Comprehension, Social Perceptiveness, Speaking, Critical Thinking

Occupational Demand

The diagnostic medical sonographers occupation had 441 workers in 2020 (Exhibit 1). This occupation is projected to grow by 32% over the next five years having 66 annual openings.

Exhibit 1. Sonography employment and occupational projections in the SCV/SML subregion

Occupation	2020 Jobs	2025 Jobs	5-Year Change	5-Year % Change	Annual Openings
Diagnostic Medical Sonographers	441	581	140	32%	66
TOTAL	**441**	**581**	**140**	**32%**	**66**

Wages

Exhibit 2 shows the entry-level hourly wages of the Sonography occupations. Diagnostic medical sonographers earn the highest entry-level wage, $36.45/hour in the subregion[2].

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[1] The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: https://insightcced.org/tools-metrics/self-sufficiency-standard-tool-for-california/.

[2] Entry-level wages are derived from the 25th percentile.

Exhibit 2. Sonography entry-level wages in the SCV/SML subregion

Diagnostic Medical Sonographers	$36.45

Dotted line denotes $11.91/hour living wage in the SCV/SML subregion

Job Postings

There were 289 job postings for the occupation in the SCV/SML subregion from February 2022 to July 2022.[3] The employers with the most job postings are listed in Exhibit 3.

Exhibit 3. Top employers of Sonography by number of job postings

Employer	Job Postings	% Job Postings
Adventist Health	25	15%
Community Health System	19	11%
Radnet	15	9%
Ahs Medstat	8	5%
Kaiser Permanente	8	5%
Kaweah Health	7	4%
Saint Agnes Medical Center	7	4%
Central California Faculty Medical Group Inc	5	3%
Siemens	5	3%
Emerald Health Services	4	2%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across one O*NET OnLine occupation. The occupational title Diagnostic Medical Sonographers is listed in 289 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include Ultrasound Technician in 20 job postings, Ultrasound Technologist in 20 job postings, and Nuclear Medicine Technician in 16 job postings.

Exhibit 4. Top occupational titles in job postings for Sonography

Occupational Title	Job Postings	% of Job Postings
Diagnostic Medical Sonographers	289	100%

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[3] Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Salaries

Exhibit 5 shows the "Market Salaries" for Sonography **occupations**. These are calculated by Burning Glass using a machine learning model built off of millions of job postings every year. This accounts for adjustments based on locations, industry, skills, experience, education requirements, among other variables.

Exhibit 5. Salaries for Sonography occupations

Market Salary Percentile	Salary Amount
10th Percentile	$49,353
25th Percentile	$58,291
50th Percentile	$66,642
75th Percentile	$74,684
90th Percentile	$83,334

Education

Of the 289 job postings, 50 listed an education level preferred for the positions being filled. Among those, 86% requested a bachelor's degree, 16% requested an associate degree, 2% requested a master's degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below may total more than 100%.
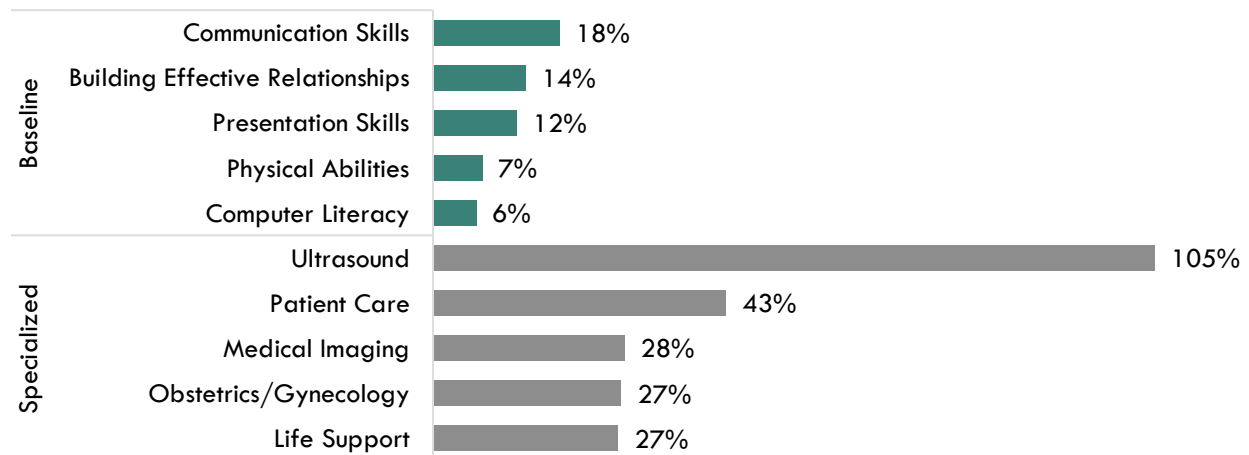
Exhibit 6. Education levels requested in job postings for Sonography

Education Level	Job Postings	% of Job Postings
Bachelor's degree	43	86%
Associate's degree	8	16%
Master's degree	1	2%

Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are communication skills, 18% of job postings, building effective relationships, 14%, and presentation skills, 12%. The top three specialized skills are ultrasound, 105% of job postings, patient care, 51%, and medical imaging, 28%.

Exhibit 7. In-demand Sonography baseline and specialized skills

Baseline	
Communication Skills	18%
Building Effective Relationships	14%
Presentation Skills	12%
Physical Abilities	7%
Computer Literacy	6%

Specialized	
Ultrasound	105%
Patient Care	43%
Medical Imaging	28%
Obstetrics/Gynecology	27%
Life Support	27%

Software Skills

Analysis also included the software skills most in demand by employers. Microsoft Excel and Office were the two software skills identified in job postings (Exhibit 8).
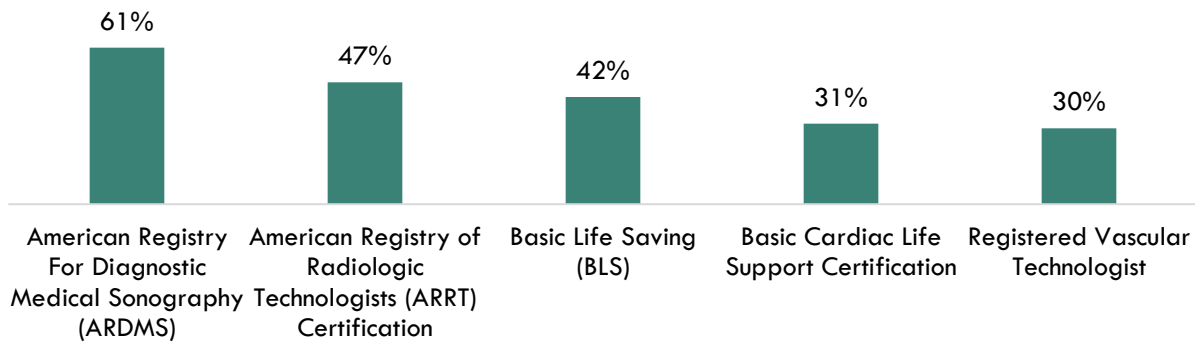
Exhibit 8. In-demand Sonography software skills

Microsoft Excel	Microsoft Office
5%	5%

Certifications

Of the 289 job postings, 237 contained certification data. Among those, 61% indicated a need for a American Registry For Diagnostic Medical Sonography (ARDMS). The next top certifications are American Registry of Radiologic Technologists (ARRT) and Basic Life Saving (BLS) (Exhibit 9).

Exhibit 9. Top Sonography certifications requested in job postings

American Registry For Diagnostic Medical Sonography (ARDMS)	American Registry of Radiologic Technologists (ARRT) Certification	Basic Life Saving (BLS)	Basic Cardiac Life Support Certification	Registered Vascular Technologist
61%	47%	42%	31%	30%

Education, Work Experience & Training

An associate degree is typically required for diagnostic medical sonographers (Exhibit 10).

Exhibit 10. Education, work experience, training, and Current Population Survey results for Sonography occupations[4]

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Diagnostic Medical Sonographers	Associate's degree	None	None	46.4%

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[4] "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, https://www.bls.gov/cps/.

Supply

Analysis of program data from the Integrated Postsecondary Education Data System (IPEDS) included the TOP and CIP codes and titles: 122700 - Diagnostic Medical Sonography and 51.0910 - Diagnostic Medical Sonography/Sonographer and Ultrasound Technician. Analysis of the last three years of data shows that, on average, 21 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

Exhibit 11. Postsecondary supply for Sonography occupations in the region

TOP/ CIP Code- Title	College	Associate Degree	Certificate 30 < 60 Semester Units	Subtotal
122700 - Diagnostic Medical Sonography	Merced		5	5
51.0910 - Diagnostic Medical Sonography/ Sonographer and Ultrasound Technician	San Joaquin Valley College-Visalia	17		17
TOTAL		**17**	**5**	**21**

There is an undersupply of 50 Sonography workers in the SCV/SML subregion and 80 workers in the region (Exhibit 12).

Exhibit 12. Sonography workforce demand (annual job openings), postsecondary supply of students (awards), and additional students needed to fill gap in the SCV/SML subregion and region
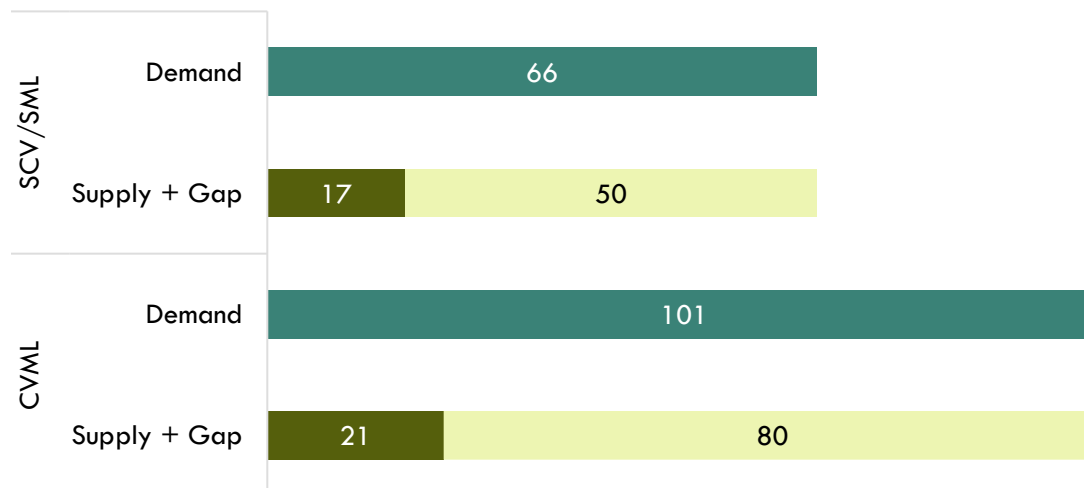
Student Outcomes

There was no employment and wage outcomes from the California Community College Chancellor's Cal-PASS Plus LaunchBoard data available for the TOP code related to Sonography

Conclusion

The entry-level wage of the occupation exceeds the SCV/SML subregion's average living wage. There were 289 job postings in the past six months for occupations related to Sonography in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is communication skills, and the top specialized skill is ultrasound.
- The top software skill is Microsoft Excel.
- The top certification is an American Registry For Diagnostic Medical Sonography (ARDMS).

There is an undersupply of trained workers, a shortage of 50 in the SCV/SML subregion and 80 in the region.

Recommendation

Based on these findings, it is recommended that Porterville College work with the regional director, the college's advisory board, and local industry in the development of programs to address the shortage of Sonography in the region.

Appendix A: Methodology & Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor's Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (EMSI). 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). Occupational wage estimates also affected by county-level EMSI earnings by industry: economicmodeling.com.
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm.
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov.
Job Posting and Skills Data	Burning Glass: burning-glass.com/.
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org.

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state and local trends.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.