

Baccalaureate Program Exploration Brief: 1240.20/Dental Hygienist (Bachelor of Science in Dental Hygiene) Orange County Center of Excellence, February 2024



Summary

The Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County labor market supply and demand data as it relates to Cypress College's proposed Dental Hygiene Baccalaureate of Science Degree Program. The occupation included in this report was selected by Cypress and reflects the occupational goals of the proposed program.

Unlike typical COE labor market analysis briefs used as part of the career education program recommendation process this report does not include the endorsement language nor corresponding endorsement table found in those briefs. Instead, this report focuses on regional supply and demand data for one middle skill occupation that aligns with the proposed Dental Hygiene Baccalaureate of Science Degree Program.

The labor market analysis included in this report focuses on the following occupations:

- Middle-Skill
 - *Dental Hygienists (29-1292)*

Middle-skill occupations typically require a community college education while above middle-skill occupations typically require at least a bachelor's degree.¹

Though this occupation typically requires an associate degree, California Business and Professions Code (BPC) states that a registered dental hygienist must satisfy the following requirements (effective January 1, 2024), none of which is the completion of a bachelor's degree:²

- *“Completion of an educational program for registered dental hygienists, approved by the dental hygiene board, accredited by the Commission on Dental Accreditation, and conducted by a degree-granting, postsecondary institution.*
- *Within the preceding three years, a person completed either of the following:*
 - *Satisfactory completion of the dental hygiene examination given by the Western Regional Examining Board or any other clinical or dental hygiene examination approved by the dental hygiene board.*
 - *Graduation from a California accredited dental hygiene college approved by the dental hygiene board.*
- *Satisfactory completion of the National Board Dental Hygiene Examination.*
- *Satisfactory completion of the examination in California law and ethics as prescribed by the dental hygiene board.*
- *Submission of a completed application form and all fees required by the dental hygiene board.*
- *Satisfactory completion of dental hygiene board-approved instruction in gingival soft-tissue curettage, nitrous oxide-oxygen analgesia, and local anesthesia*

¹ The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

² https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=BPC§ionNum=1917.

- *Current, valid certification in basic life support offered by a course consistent with Section 1016, 1016.2, or 1017 of Title 16 of the California Code of Regulations.”*

Notably, there are currently two educational institutions - one community college (West LA) and one private, for-profit university (West Coast) - in the region that offer a baccalaureate degree in dental hygiene. Though the University of Southern California (USC) previously offered both a bachelor’s and master’s degree in dental hygiene, both programs were discontinued. In February 2021, USC announced that the class of 2021 would be the last to graduate with a bachelor’s degree and noted that “new programs that offer both a bachelor’s degree and certificate in dental hygiene opened in recent years at a significantly lower cost.”³ Though USC’s programs have been discontinued and will not contribute to future labor market supply, the supply figures included in this report include awards conferred by USC over the last three years of available data.

Additionally, West LA college – as well as Foothill College in the Bay Area - discontinued their dental hygiene associate degree programs after receiving approval for a pilot baccalaureate program in 2015. In its final evaluation of the baccalaureate degree pilot, the Legislative Analyst’s Office (LAO)⁴ noted its concerns that:

...employers neither require a bachelor’s degree in this area nor pay more for students with one. Closing the associate degree programs reduces access to an existing pathway that leads to a well-paying job for students. Students living in the region who are interested in only obtaining an associate degree are now required either to travel outside of their local area to find such a program or enroll in the bachelor’s degree program and take more courses than they had intended to obtain the same entry-level position.

The LAO also noted that these pilot baccalaureate dental hygiene programs were not meeting workforce needs, including filling hard-to-staff positions, leading to a higher wage than associate degree holders, or providing better workforce preparation compared to other bachelor’s degree programs. The following section provides summary findings from this labor market brief.

Summary Findings

Exhibit 1 shows the demand, supply, entry-level hourly wages, number of online job postings, and percentage of incumbent workers that have completed a bachelor’s degree as their highest level of education. Additional details regarding each column are included in the notes below Exhibit 1.

Exhibit 1: Occupational Demand and Supply in Los Angeles/Orange Counties

Occupation (SOC)	Demand (Annual Openings) ⁱ	Supply (CC and Non-CC)	Entry-Level Hourly Earnings (25 th Percentile) ⁱⁱ	Online Job Postings ⁱⁱⁱ	Bachelor’s Degree Educational Attainment ^{iv}
Dental Hygienists (29-1292)	LA: 560 OC: 278	LA: 126 OC: 101	OC: \$51.57	1,765	32%
Total					

ⁱ Demand is represented by the projected number of annual job openings from 2022 to 2027

³ <https://dentistry.usc.edu/usc-to-close-dental-hygiene-program/>

⁴ <https://lao.ca.gov/Publications/Report/4140>

ⁱⁱ Entry-level hourly earnings are represented by the 25th percentile, which indicates 25% of workers in that occupation earn less than that amount while 75% earn more. When interpreting wage data, the living wage for one adult should also be considered. The living wage is \$20.63 in Orange County and \$18.10 in Los Angeles County. The average statewide living wage for California is \$16.75 per Insight Center's California Family Needs Calculator.

ⁱⁱⁱ The number of online job postings presented in this column includes postings specifically for each occupation listed over the past 12 months.

^{iv} Educational attainment is represented by the percentage of incumbent workers that have completed a bachelor's degree as their highest level of education. This data is currently only available at the national level.

Demand:

- The number of jobs related to *dental hygienists* is projected to increase 9% through 2027, equating to 847 annual job openings.
- Hourly entry-level wages for *dental hygienists* is \$51.57 in Orange County, which is above the living wage of \$20.63
- There were 1,765 online job postings for *dental hygienists* over the past 12 months. The highest number of postings were for dental hygienists, hygienists, and registered dental hygienists.
- The typical entry-level education for *dental hygienists* is an associate degree.
- Approximately 59% workers in the field have completed some college or an associate degree as their highest level of educational attainment.

Supply:

- There was an average of 227 awards conferred annually by community college and non-community college institutions.
 - Community colleges conferred an average of 116 awards annually in Los Angeles and Orange Counties from 2019 to 2022.
 - Non-community college institutions conferred an average of 111 awards from 2019 to 2021.
- Orange County community college students that exited dental hygienist programs in the 2020-21 academic year had a median annual wage of \$65,882 (\$31.67 per hour) after exiting the program.
- There was insufficient data to determine the percentage of Orange County dental hygienist students that are working in a job closely related to their field of study.

Demand

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for *dental hygienists* from 2017 through 2027. Employment for *dental hygienists* decreased 8% in Orange County from 2019 to 2020 due to the COVID-19 pandemic, which is similar to the 7% decline across all occupations during the same period. However, employment for *dental hygienists* sharply increased by 24% from 2020 to 2021, then declined 1% from 2021 to 2022. Nevertheless, employment for this occupation is projected to increase each year thereafter. On average, employment for *dental hygienists* is projected to grow at a slightly higher rate compared to all occupations each year through 2027.

Exhibit 2: Annual Percent Change in Jobs for *Dental Hygienists*, 2017-2027

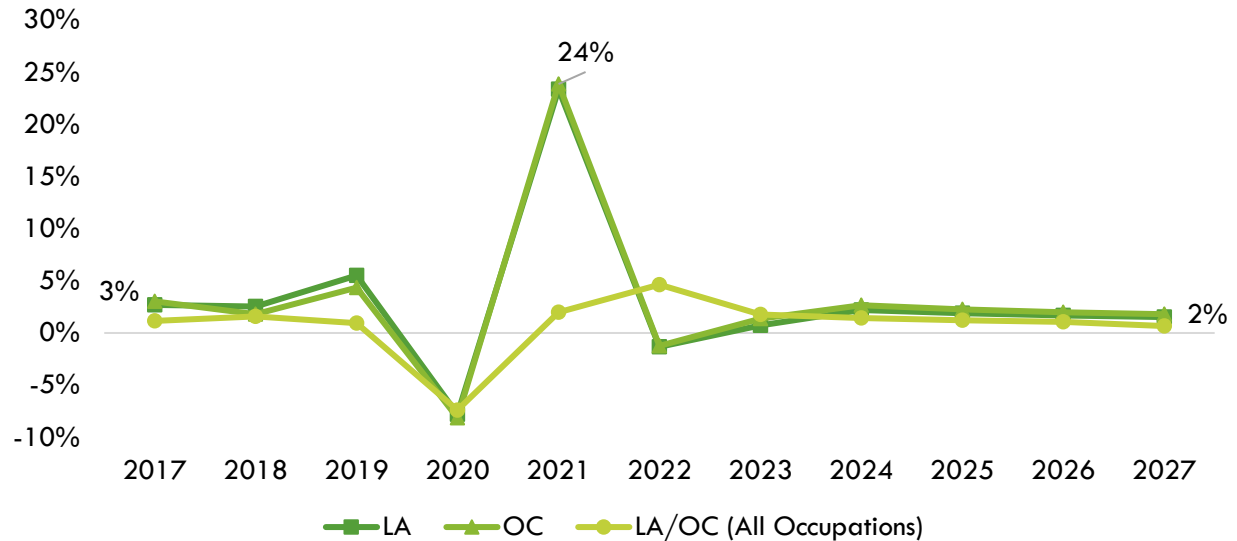


Exhibit 3 shows the five-year occupational demand projections for *dental hygienists*. In Los Angeles/Orange County, the number of jobs related to this occupation is projected to increase by 9% through 2027. There is projected to be 847 jobs available annually.

Exhibit 3: Occupational Demand in Los Angeles and Orange Counties⁵

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	6,800	7,363	563	8%	569
Orange	3,136	3,465	329	10%	278
Total	9,936	10,828	892	9%	847

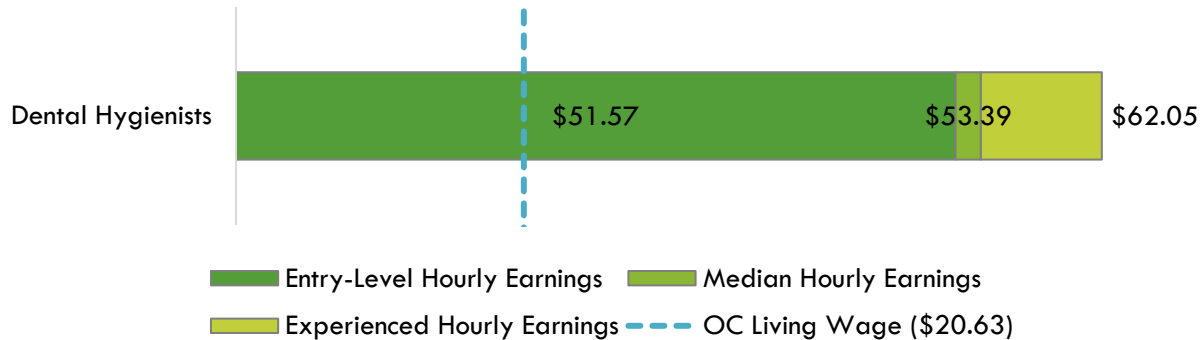
⁵ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Wages:

The labor market analysis in this report considers the entry-level hourly wages for *dental hygienists* in Orange County as they relate to the county's living wage. Los Angeles County wages are included below in order to provide a complete analysis of the LA/OC region.

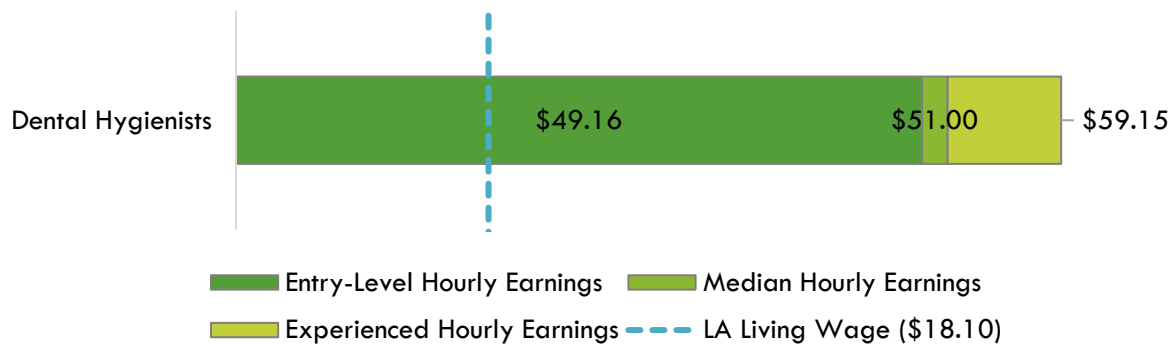
The typical entry-level hourly wage for *dental hygienists* is \$51.57, which is significantly above the living wage for one adult (\$20.63 in Orange County). Orange County's average wage of \$55.39 is higher relative to the average statewide wage of \$53.45 for this occupation. Exhibit 4 shows the wage range for *dental hygienists* in Orange County and how it compares to the regional living wage.

Exhibit 1: Wages by Occupation in Orange County



The typical entry-level hourly wage for *dental hygienists* is \$49.16, which is significantly above the living wage for one adult (\$18.10 in Los Angeles County). Los Angeles County's average wage of \$52.74 is below the average statewide wage of \$53.45 for this occupation. Exhibit 5 shows the wage range for *dental hygienists* in Los Angeles County and how it compares to the regional living wage.

Exhibit 2: Wages by Occupation in Los Angeles County



Job Postings:

Important Online Job Postings Data Note: Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words of phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.⁶ For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast’s database.

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 1,765 online job postings related to dental hygienists listed in the past 12 months, as shown in Exhibit 6.

Exhibit 3: Number of Job Postings by Occupation (n=1,765)

Occupation	Job Postings	Percentage of Job Postings
Dental Hygienists	1,765	100%

The top employers in the region, by number of job postings, are shown in Exhibit 7.

Exhibit 4: Top Employers by Number of Job (n=1,765)

Employer	Job Postings	Percentage of Job Postings
Western Dental Orthodontics	376	21%
Sonrava Health	128	7%
Pacific Dental Services	77	4%
Western Dental	56	3%
Gentle Dental	54	3%
West Coast Dental Services	34	2%
Smile Brands	31	2%
Western Dental Services	29	2%
Miracle Smile Dentistry	15	1%
Bright Now! Dental	14	1%

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown in Exhibit 8.

Exhibit 5: Top Skills by Number of Job Postings (n=1,765)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Dental Hygiene (1,050)	Apple iPad (585)	Dentrix (88)

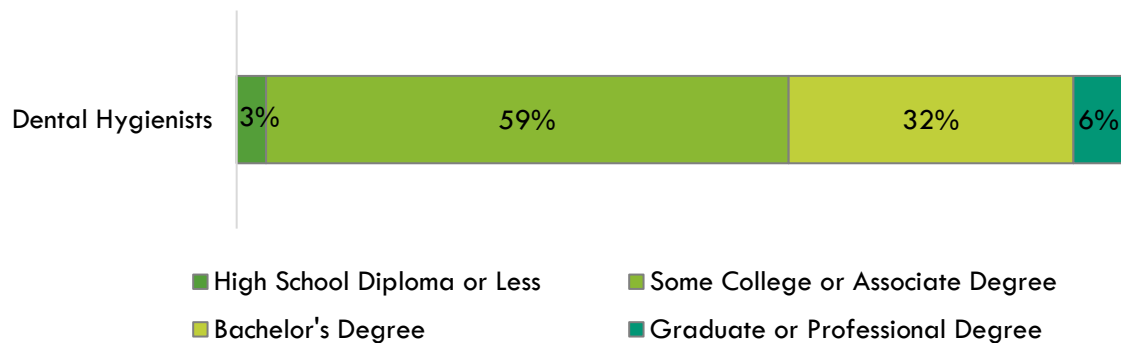
⁶ K. R. Chowdhary, Fundamentals of Artificial Intelligence (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>.

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Oral Hygiene (711)	Communication (274)	Epic EMR (16)
Patient Education And Counseling (681)	Customer Service (162)	Microsoft Excel (8)
Dental Procedures (640)	Detail Oriented (101)	Practice Management Software (6)
Front Office (607)	Interpersonal Communications (45)	Open Dental (5)
Billing (591)	Leadership (43)	Software Systems (5)
Marketing (585)	Positivity (38)	Microsoft Word (4)
Call Center Experience (578)	Relationship Building (36)	Apache Airflow (2)
Procurement (578)	Operations (32)	Microsoft Outlook (2)
Cardiopulmonary Resuscitation (CPR) (262)	Advising (30)	Apache Kafka (1)

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for *dental hygienists*. The national-level educational attainment data indicates approximately 32% of *dental hygienists* have completed a bachelor's degree as their highest level of education. Exhibit 11 shows the educational attainment for each occupation, sorted by highest community college educational attainment to lowest.

Exhibit 11: National-level Educational Attainment for Occupations



Of the 11% of the cumulative job postings for *dental hygienists* that listed a minimum education requirement in Los Angeles/Orange County, 54% (106) requested a bachelor's, master's, or doctoral degree and 46% (89) requested a high school diploma or an associate degree.

Educational Supply

Community College Supply:

Exhibit 12 shows the three-year average number of awards conferred by community colleges in the related TOP codes: Dental Occupations (1240.00) and Dental Hygienist (1240.20). It is important to note that no awards were conferred under the Dental Occupations (1240.00) TOP code and regional community colleges only conferred awards under the Dental Hygienist (1240.20) TOP code, as shown in Exhibit 10. The colleges with the most completions in the region are West LA and Pasadena. Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

West LA is currently one of two colleges throughout the state with a dental hygiene baccalaureate program. Over the past three years, West LA has conferred an average of 49 bachelor's degrees annually, which accounts for 42% of the total community college supply in the region.

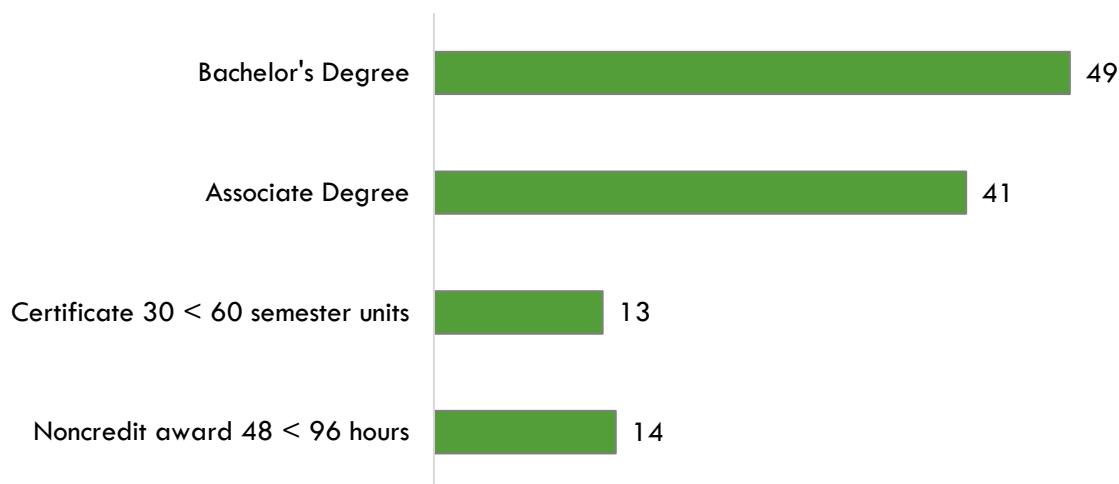
Additionally, West LA discontinued its associate degree program after receiving approval for the bachelor's degree program. The LAO noted that the closure of the associate degree program reduces access to an existing pathway for a well-paying job and that students interested in an associate degree program are now required to travel further or enroll in the bachelor's degree program, which requires more courses, to obtain the same certification.

Exhibit 12: Regional Community College Awards (Certificates and Degrees), 2019-2022

TOP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
1240.20	Dental Hygienist	Cerritos	20	1	33	18
		Pasadena	19	29	11	20
		West LA	42	71	74	62
		LA Subtotal	81	101	118	100
		Cypress	1	15	31	16
		OC Subtotal	1	15	31	16
Supply Total/Average			82	116	149	116

Exhibit 13 shows the annual average community college awards by type from 2019-20 through 2021-22. The majority of the awards are for bachelor's degrees.

Exhibit 13: Annual Average Community College Awards by Type in Los Angeles and Orange Counties, 2019-2022



Community College Student Outcomes:

Exhibit 14 shows the Strong Workforce Program (SWP) metrics for dental hygienist programs in North Orange County Community College District (NOCCCD), the Orange County Region, and California. NOCCCD is home to the sole college (Cypress) in the Orange County Region that provides dental hygienist programs. Therefore, data reported at regional and district levels are identical.

Of the 1,216 dental hygienist students in the 2020-21 academic year across the state, 5% (65) attended an NOCCCD institution of higher education. NOCCCD students that exited dental hygienist programs in the 2020-21 academic year had lower median annual earnings (\$65,882 or \$31.67 hourly) compared to all dental hygienist students in the state (\$70,024 or \$33.67 hourly). Furthermore, a lower percentage of NOCCCD dental hygienist students attained the living wage (69%) when compared to all dental hygienist students in California (78%).

Exhibit 14: Dental Hygienist (1240.20) Strong Workforce Program Metrics, 2020-21⁷

SWP Metric	NOCCCD	OC Region	California
SWP Students	65	65	1,216
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	52%	52%	60%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	Insufficient Data	Insufficient Data	98%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	15	15	417
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	Insufficient Data	Insufficient Data	Insufficient Data
SWP Students with a Job Closely Related to Their Field of Study (2019-20)	Insufficient Data	Insufficient Data	91%

⁷ All SWP metrics are for 2020-21 unless otherwise noted.

SWP Metric	NOCCCD	OC Region	California
Median Annual Earnings for SWP Exiting Students	\$65,882 (\$31.67)	\$65,882 (\$31.67)	\$70,024 (\$33.67)
Median Change in Earnings for SWP Exiting Students	Insufficient Data	Insufficient Data	78%
SWP Exiting Students Who Attained the Living Wage	69%	69%	78%

Non-Community College Supply:

For a comprehensive regional supply analysis, it is also important to consider the supply from other institutions in the region that provide training programs for *dental hygienists*. Exhibit 15 shows the annual and two-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Code: Dental Hygiene/Hygienist (51.0602). Due to different data collection periods, the most recent two-year period of available data is from 2019 to 2021. Between 2019 and 2021, non-community college institutions in the region conferred an average of 111 awards annually in related training programs.

It is also important to note USC discontinued its bachelor’s degree program in February 2021. Though USC will not contribute to future supply, the supply figures throughout this report include awards conferred by USC over the past two years of available data. In its announcement to discontinue the dental hygiene bachelor’s degree, USC noted that “new programs that offer both a bachelor’s degree and certificate in dental hygiene opened in recent years at a significantly lower cost.”

Exhibit 65: Regional Non-Community College Awards, 2019-2021

CIP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2-Year Award Average
51.0602	Dental Hygiene/Hygienist	Concorde Career College-Garden Grove	23	23	23
		University of Southern California	21	30	26
		West Coast University-Orange County	45	79	62
Supply Total/Average			89	132	111

Regional Demographics

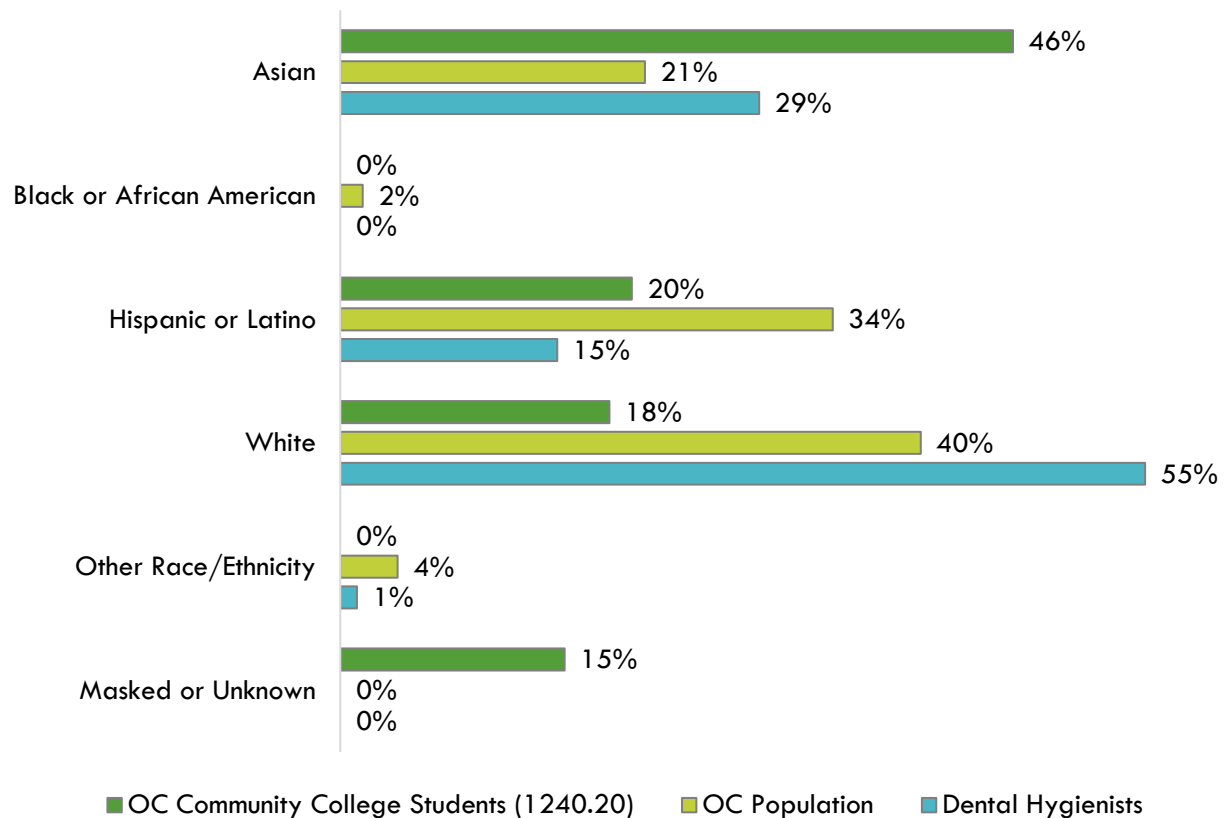
This section compares demographic data for Orange County community college students enrolled in dental hygienist programs, the OC population, and occupational data, for the purpose of identifying potential diversity and equity issues that can be addressed by community college programs.

As noted in the student outcomes section, there were only 65 dental hygienist students in the Orange County region in 2020-21. Therefore, student demographic information is masked for several groups.

Ethnicity:

Exhibit 16 shows the ethnicity of Orange County community college students enrolled in dental hygienist programs compared to the overall Orange County population, as well as *dental hygienists*. Notably, 55% of *dental hygienists* are white, which is significantly higher than the population (40%) and Orange County community college dental hygienist students (18%). Conversely, 46% of dental assistant students are Asian, which is significantly higher than the population (21%) and *dental hygienists* (29%).

Exhibit 16: Program and County Demographics by Ethnicity

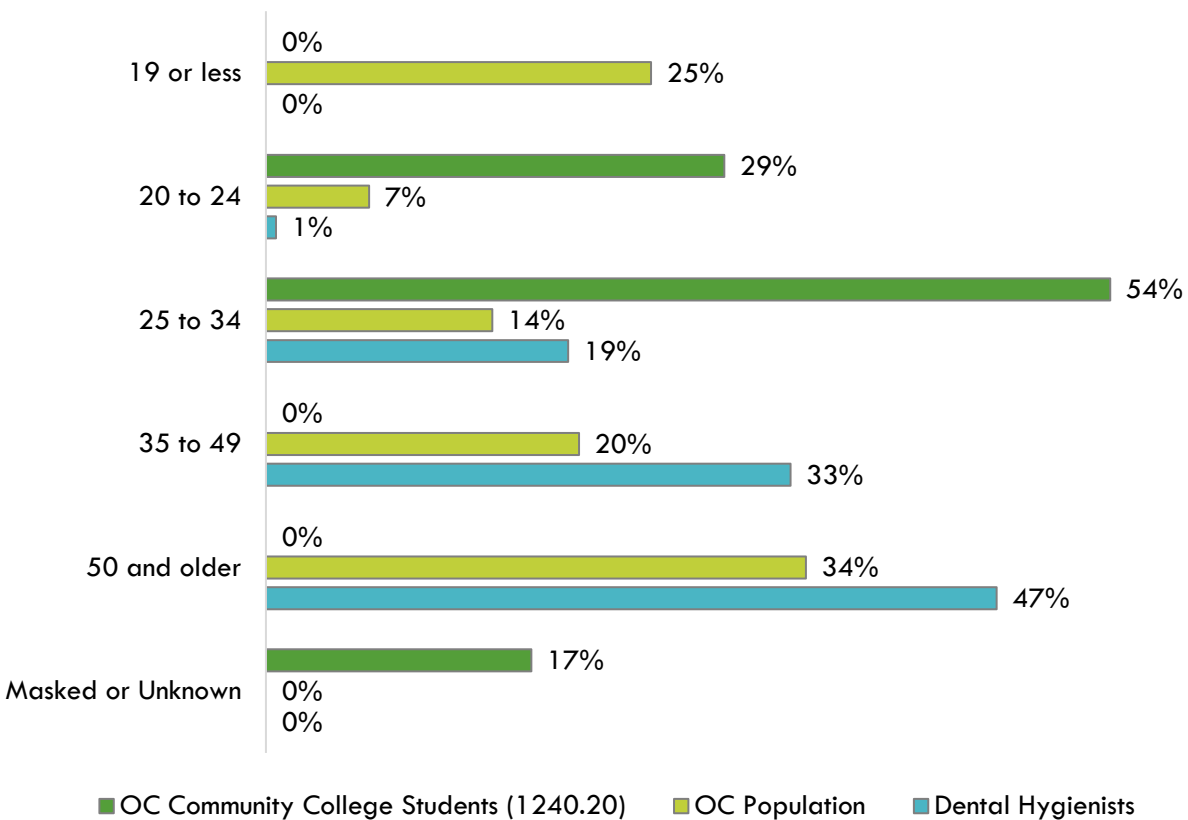


Age:

Exhibit 17 compares the age of Orange County community college students enrolled in dental hygienist programs, the overall Orange County population, and occupational data for *dental hygienists*.

Age groups 20 to 24 and 25 to 34 account for a supermajority (83%) of community college dental hygienist students despite representing only 21% of the county's population and 20% of workers in the field (other than the 17% of masked or unknown students, these two age groups are the only two groups of community college dental hygienist students). Conversely, workers aged 35 to 50 and older make up the vast majority (80%) of the workers in the field. There are no representatives from this age group among the community college dental hygienist students even though they constitute nearly 54% of the county's population.

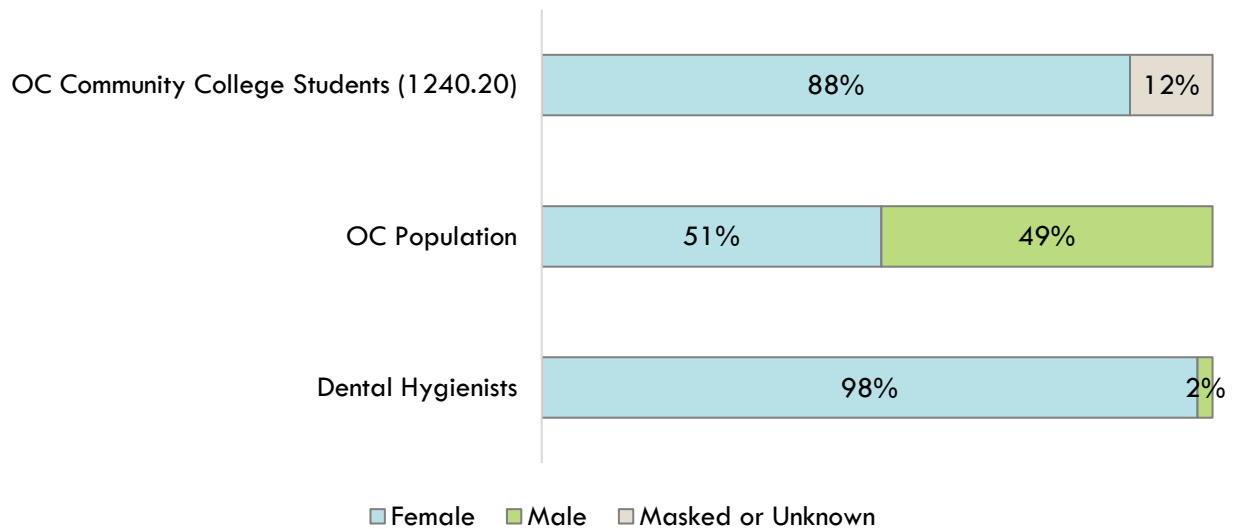
Exhibit 77: Program and County Demographics by Age



Sex:

Exhibit 18 compares the sex of Orange County community college students enrolled in dental hygienist programs, the overall Orange County population, and occupational data for *dental hygienists*. Notably, despite accounting for nearly half of the county's population, men hold no representation amongst community college dental hygienist students and account for only 2% of workers in the field; conversely, women comprise 88% of community college dental hygienist students and 98% of workers in the field despite the population being nearly evenly split.

Exhibit 18: Program and County Demographics by Sex



Appendix A: Methodology

The OC COE prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the OC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The OC COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a “supply table” with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represents the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the OC COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees but is not a perfect measure of the quantity of open positions.

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; 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 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.

Appendix B: Data Sources

Data Type	Source
Occupational Projections, Wages, and Job Postings	<p>Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see https://lightcast.io/</p>
Living Wage	<p>The living wage is derived from the Insight Center’s California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, childcare, health care, transportation, and taxes. For more information, see: https://insightccd.org/family-needs-calculator/</p> <p>The living wage for one adult in Orange County is \$20.63 per hour (\$42,910.40 annually). This figure is used by the CCCCCO to calculate the percentage of students that attained the regional living wage.</p>
Typical Education and Training Requirements, and Educational Attainment	<p>The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see https://www.bls.gov/emp/documentation/education/tech.htm</p>
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	<p>The O*NET database includes information on skills, abilities, knowledge, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/</p>
Educational Supply	<p>The CCCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</p>
Student Metrics and Demographics	<p>LaunchBoard, a statewide data system supported by the California Community Colleges Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: https://www.calpassplus.org/LaunchBoard/Home.aspx</p>

Data Type	Source
Population and Occupation Demographics	<p>The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs</p> <p>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml</p>

For more information, please contact the Orange County Center of Excellence:

Jesse Crete, Ed. D., Director
 crete_jesse@rscdd.edu

Jacob Poore, Assistant Director
 poore_jacob@rscdd.edu

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