

# HEALTH



**Orange County Sector Analysis Project**

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Prepared by:  
Orange County Center of Excellence  
for Labor Market Research

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# HEALTH

## Demand and Supply Analysis: Orange County

### TABLE OF CONTENTS

INTRODUCTION .....	2
HEALTH TOP MIDDLE-SKILL JOBS .....	4
HEALTH MIDDLE-SKILL JOBS WITH ENTRY-LEVEL WAGES BELOW CALIFORNIA FAMILY NEEDS CALCULATOR .....	8
FOCUS GROUP INSIGHTS – THE BIG PICTURE .....	11
KEY FINDINGS: HEALTH .....	12
APPENDIX A: METHODOLOGY AND HEALTH DATA DEFINITIONS .....	14
APPENDIX B: DEFINITIONS FOR HEALTH MIDDLE-SKILL JOBS .....	18
APPENDIX C: HEALTH DEMAND AND SUPPLY DATA .....	23

#### 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 college/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.

## INTRODUCTION

This sector brief is a product of the Orange County Sector Analysis Project. It provides information about the Health sector in Orange County, one of Orange County's six priority sectors; it compares labor market demand with educational program supply for middle-skill jobs and provides qualitative information from experts in the field. Orange County community colleges could use the information in this report for strategic planning and discussions about program development, career pathways work, sector strategies, noncredit-to-credit pipelines, apprenticeship programs, and work-based learning opportunities.

All of the Orange County Sector Analysis Project briefs began with quantitative labor market demand and supply analysis; however, they also include qualitative information derived from the project's focus group discussions. Between July and August 2019, the Orange County Center of Excellence for Labor Market Research (COE) hosted a total of 12 sector-specific focus groups with regional stakeholders, including faculty and deans, as well as regional and state directors for employer engagement. One of these focus groups was specific to the Health sector. The objectives of the focus groups were to identify labor market supply gaps (supply gaps) in middle-skill jobs; understand where programs exist or do not exist to fill in the supply gaps; and discuss how Orange County's community colleges could close the supply gaps. Focus group participants reviewed the demand and supply analysis prior to meeting and provided intelligence regarding how they are working to close supply gaps as well as the challenges they encounter in their programs; this valuable information could not be captured via traditional labor market research methods. The COE recorded then analyzed these discussions which resulted in the "Focus Group Insights" sections throughout this brief, supplementing traditional, quantitative labor market data with important, qualitative information.

## Middle-Skill Jobs and Living Wage Introduction

In this brief, 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.

In this brief, top middle-skill jobs are defined as jobs that have both the most labor market demand (annual job openings) and entry-level wages at or above the California Family Needs Calculator<sup>1</sup> (commonly known as a "living wage"). The living wage is the hourly wage that a single adult needs to earn in order to meet basic needs in Orange County, and is currently \$17.39 per hour. The living wage is defined by the California Family Needs Calculator, which calculates the income necessary to cover costs including housing, food, transportation, health care, and other basic necessities.

Entry-level wage is defined as the 25<sup>th</sup> percentile hourly wage, which means that 25% of all workers in that occupation earn equal to or below this amount. Percentile wages represent the distribution of wages for each occupation. Generally, workers with minimal education and experience can expect to earn wages near the 10<sup>th</sup> percentile. With the additional education and training students receive in community college programs, they are more likely to earn wages at the 25<sup>th</sup> percentile, rather than the 10<sup>th</sup> percentile. Generally, with even more education and experience, students could expect to progress and earn the median wage, which is defined as the 50<sup>th</sup> percentile hourly wage.

## Demand Introduction

For the purpose of this report, labor market demand is determined by the number of annual job openings employers expect to fill due to job growth and employee turnover between 2018 and 2023. Job growth is when an employer experiences increased demand for products and hires new employees to increase production, while employee turnover is when an employer hires replacement workers for employees who leave the workforce or change occupations.

## Supply Introduction

Supply is determined by the average annual-number of related awards (e.g., certificates, degrees) generated between 2015 and 2017 by the region's community colleges and other educational institutions (e.g., private providers) for the

<sup>1</sup> <https://insightccd.org/2018-family-needs-calculator/>

purpose of this report. However, it should be noted that a student may earn more than one award; therefore, supply may be overestimated for certain occupations.

Whether or not there is a supply gap is determined by the difference between the demand and supply. The methodology regarding how these numbers are calculated is described in Appendix A.

### **FOCUS GROUP INSIGHTS**

The Health sector focus group included three faculty members and three administrators from six of the 10 institutions – nine community colleges and one noncredit school – that offered Health programs in Orange County between 2015 and 2017. The regional director for employer engagement also attended the focus group.

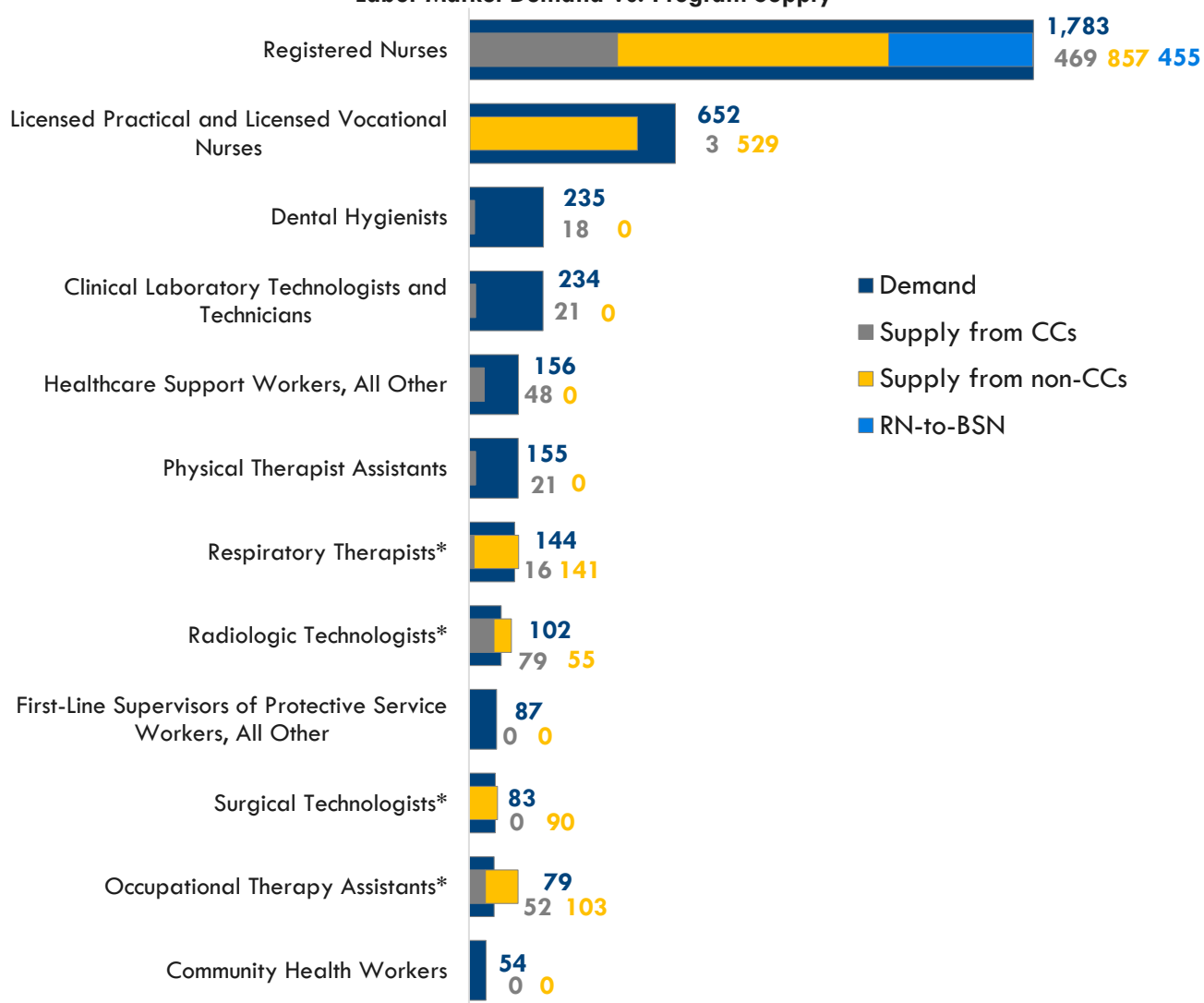
Focus group participants identified several data limitations, challenges in expanding programs, and other issues that were common across multiple sectors. The cross-sector, common themes are expanded on and explained in further detail in the standalone Orange County Sector Analysis Project Executive Summary report. Focus group participants also reported on limitations and challenges that were unique to the Health sector. This sector-specific information is highlighted throughout this report in the Focus Group Insights and the Focus Group Insights – The Big Picture sections.

## HEALTH TOP MIDDLE-SKILL JOBS

This section compares Orange County's labor market demand for the top middle-skill jobs in Health with program supply from the region's community colleges and non-community college providers (Exhibit 1). It is important to note that a third category, Registered Nurse to Bachelors of Science in Nursing (RN-to-BSN), has been added to the Registered Nurses occupation because some institutions, such as University of Phoenix and Brandman University, provide programs for those who already are a registered nurse and have an associate's degree in nursing to earn their Bachelors of Science in Nursing; therefore, these programs are not training new nurses and are not creating additional supply.

As seen in Exhibit 2, the entry-level wages<sup>2</sup> for these top middle-skill jobs are higher than the \$17.39 per hour living wage. Descriptions for each occupational title can be found in Appendix B. Detailed supply and demand data analyzed for each occupation, including supply numbers by institutions is included in Appendix C.

**Exhibit 1. Health Top Middle-Skill Jobs in Orange County:  
Labor Market Demand vs. Program Supply**



(Please note: \* indicates that the occupation has an oversupply of labor, and N/A indicates that no community college program reported awards for this occupation or no community college program is available for this occupation.)

<sup>2</sup> In this report, entry-level wage is defined as the 25<sup>th</sup> percentile hourly wage, which means that 25% of all workers in the field earn equal to or below this amount. Generally, workers with less experience earn lower wages.

## FOCUS GROUP INSIGHTS

### Registered Nurses and RN-to-BSN Programs

Focus group participants pointed out that the supply number for Registered Nurses is misleading because it overstates the number of *new* nurses that are being trained. The regional director for employment engagement explained that there are pre-licensure nursing programs, such as those provided by the community colleges, which are for students who do not currently hold a nursing license, and RN-to-BSN programs, which are for those who already are a registered nurse and have an associate's degree in nursing to earn their Bachelors of Science in Nursing. The institution with the highest number of awards for registered nurses, University of Phoenix, offers an RN-to-BSN program only; Brandman University also only offers an RN-to-BSN program.

Other institutions, such as California State University Fullerton, offer both types of programs. Due to the way IPEDS collects awards data, the COE cannot determine how many awards were conferred for pre-licensure programs versus RN-to-BSN programs at institutions that offer both programs (non-community college supply information is generated from CIP data which comes from the Integrated Postsecondary Education Data System [nces.ed.gov/ipeds/use-the-data], also known as IPEDS). Therefore, the data presented in Exhibit 1 overstates the supply for registered nurses by an undeterminable amount of at least 455 awards because it is double-counting current registered nurses.

Recently created programs, such as Vanguard University's new pre-licensure program, are not included in the supply figures because their awards were conferred after the years 2015 through 2017 which were analyzed in this report.

Focus group participants suggested that an alternative method of measuring supply for registered nurses is by using pass rates for the NCLEX-RN exam from the California Board of Registered Nursing.<sup>3</sup> From 2015 to 2017, an annual average of 1,755 individuals that attended an educational institution in Orange County passed the NCLEX-RN exam. Additionally, some institutions listed by the Board of Registered Nursing are missing from the supply figures in this report.

### Missing Supply Data

Focus group participants noted that awards for the University of San Francisco's Orange County Campus, Western Governors University, University of California-Irvine, and Vanguard University were not reported in the supply figures. There are a variety of reasons for why these institutions are not included in the data. The University of San Francisco offers a pre-licensure Master of Science in Nursing (MSN) at its Orange County campus, which is beyond the scope of this report. Since Western Governors University is based in Utah, all awards, regardless of student location, are reported to IPEDS from the Utah campus; therefore, Western Governors University is not included in the supply figures in this report and the COE cannot determine the number of awards conferred to students in California. It is worth noting that Western Governors University is not currently accepting new applications for their pre-licensure nursing program "due to high demand and a limited number of clinical sites in Southern California."<sup>4</sup> Though University of California-Irvine and Vanguard University have students that passed the NCLEX RN exam, they do not use the Registered Nursing CIP code (51.3801) when reporting to IPEDS, so the COE cannot determine the number of awards conferred by these institutions.

The regional director for employer engagement said that the supply numbers in this report also do not include data from Regional Occupational Programs (ROP) and local adult schools such as Huntington Beach Adult School, North Orange ROP, and Santa Ana Adult School. These institutions have training programs for Dental Assistants, Medical Assistants, and Personal Care Aides. Since these institutions did not report awards to IPEDS, they are not included in the supply figures in this report; therefore the supply numbers for those occupations are likely understated.

*"We are missing the ROPs. At the high school level, they are really providing that hands-on training for medical assistants. [Students] graduate as real medical assistants."*  
— Regional Director for Employer Engagement

### TOP Code Miscoding

Focus group participants from the noncredit school, North Orange Continuing Education, noted that they are showing supply for the occupation, Physical Therapist Assistant (an average of 21 annual awards). However they do not have a

<sup>3</sup> <https://www.rn.ca.gov/education/passrates.shtml>

<sup>4</sup> <https://www.wgu.edu/online-nursing-health-degrees/rn-prelicensure-nursing-bachelors-program.html>

program corresponding to this occupation. They determined that this was a TOP code misalignment issue and would look into the matter locally. The removal of these awards does not alter the supply gap determination since the demand of 155 annual job openings for Physical Therapist Assistant is going unmet.

### Other Related Occupations

Faculty members reported that some occupations for which they have programs were missing from this report. Some examples include Dietetic Technicians, Medical and Clinical Laboratory Technicians, and Morticians. There is a separate reason, however each is methodologically-based, why these three occupations are not specifically examined in this report. The first occupation mentioned, Dietetic Technicians, had less than 50 annual job openings and therefore, it did not meet the threshold to be included in the analysis, as defined in the methodology in Appendix A.

The second occupation, Medical and Clinical Laboratory Technicians was left out due to a change in how the Bureau of Labor Statistics (BLS) aggregates similar occupations. The Medical and Clinical Laboratory Technicians occupation (formerly SOC code 29-2012) was grouped into the broader Clinical Laboratory Technologists and Technicians (SOC Code 29-2010) occupation in 2017. Therefore, data for Medical and Clinical Laboratory Technician and Medical and Clinical Laboratory Technologists (formerly SOC code 29-2011), are included in the broader Clinical Laboratory Technologists and Technicians (SOC code 29-2010) occupation displayed in Exhibit 1.<sup>5</sup>

Finally, while the third occupation, Morticians is related to health programs, it is not included in this sector because it falls into a different sector based on the related TOP code, in this case, Business and Entrepreneurship. Even though these occupations are not specifically included in this report, the skills students learn in Health programs overall can be applied to several occupations and make students more employable across sectors.

### Emerging Areas – Health IT and Nursing Informatics

Focus group participants identified emerging areas that are not fully captured in traditional labor market information such as Health Information Technology (HIT) and Nursing Informatics jobs and some of the career paths for these positions. According to the focus group participants, Nursing Informatics positions may be filled with nurses that have come from within the hospital or other frontline staff who cannot physically perform their role anymore due to physical limitations. These workers can then be re-trained in another area such as healthcare informatics. While HIT and Nursing Informatics are emerging areas, there is currently an oversupply of workers for Medical Records and Health Information Technicians (SOC code 29-2071), as displayed in Exhibit 3 on the following page. Additionally, while HIT workers are currently trained at the associate degree level, the regional director for employer engagement pointed out that the American Health Information Management Association (AHIMA), has been pushing to move education requirements to the bachelor's degree level. Furthermore, Nursing Informatics is primarily taught at the master's degree level and is considered above middle-skill.

**Exhibit 2. Health Top Middle-Skill Jobs in Orange County: Entry-Level and Median Wages**

SOC Code	SOC (Occupational) Title	Demand (Annual Openings)	Entry-Level Wage (25 <sup>th</sup> Percentile)	Median Wage
29-1141	Registered Nurses	1,783	\$32.88	\$42.47
29-2061	Licensed Practical and Licensed Vocational Nurses	652	\$20.63	\$25.57
29-2021	Dental Hygienists	235	\$29.86	\$45.68
29-2018	Clinical Laboratory Technologists and Technicians	234	\$19.29	\$27.21
31-9099	Healthcare Support Workers, All Other	156	\$18.09	\$21.23
31-2021	Physical Therapist Assistants	155	\$21.86	\$29.34

<sup>5</sup> [https://www.bls.gov/oes/changes\\_2017.htm](https://www.bls.gov/oes/changes_2017.htm)

## Demand and Supply Analysis: Orange County

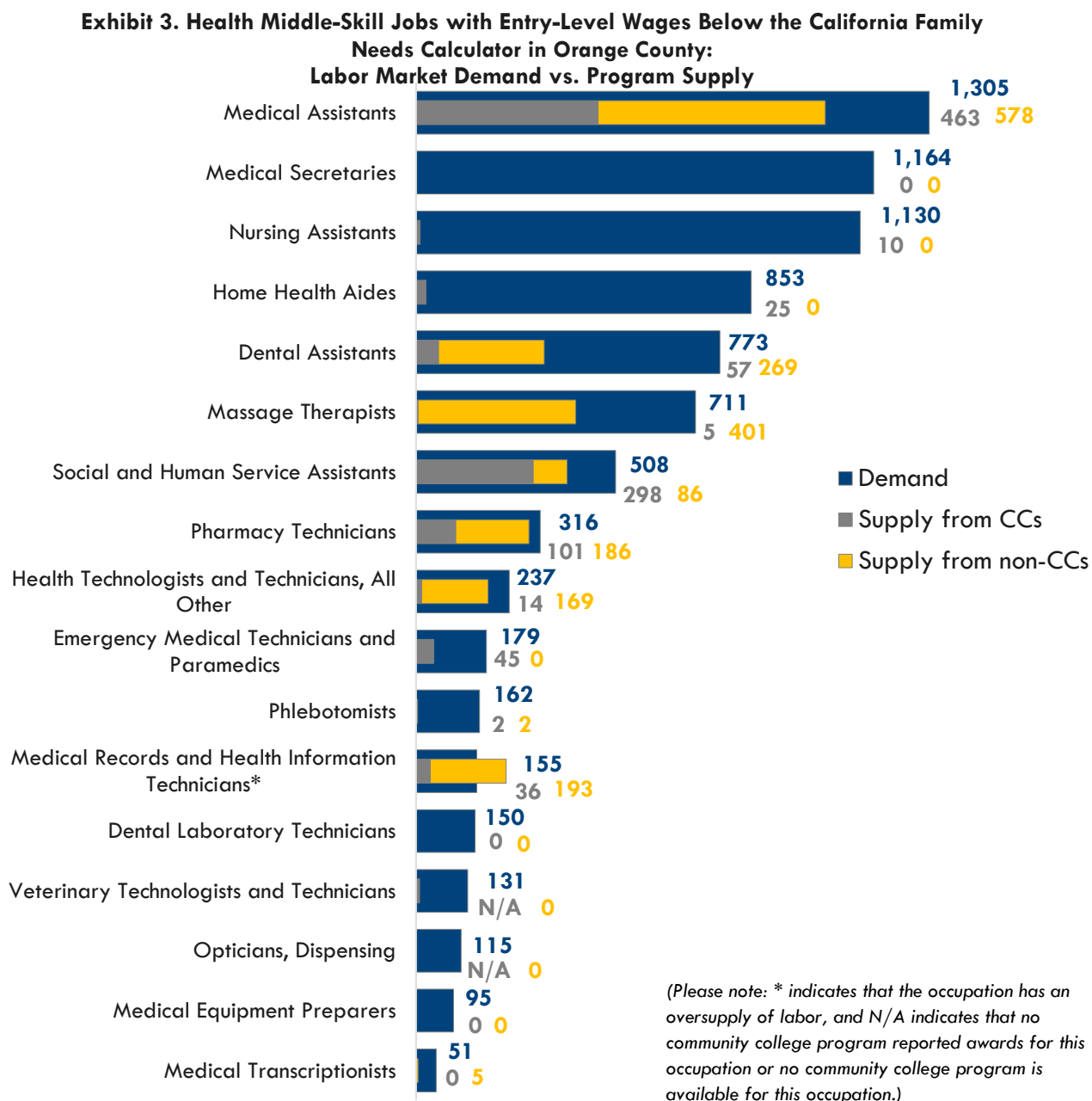
SOC Code	SOC (Occupational) Title	Demand (Annual Openings)	Entry-Level Wage (25 <sup>th</sup> Percentile)	Median Wage
29-1126	Respiratory Therapists	144	\$29.49	\$35.32
29-2034	Radiologic Technologists	102	\$31.19	\$38.54
33-1099	First-Line Supervisors of Protective Service Workers, All Other	87	\$23.33	\$27.51
29-2055	Surgical Technologists	83	\$22.48	\$27.53
31-2011	Occupational Therapy Assistants	79	\$18.42	\$27.70
21-1094	Community Health Workers	54	\$19.79	\$23.58



## HEALTH MIDDLE-SKILL JOBS WITH ENTRY-LEVEL WAGES BELOW CALIFORNIA FAMILY NEEDS CALCULATOR

While it is important to understand which top middle-skill jobs have opportunities for increased program supply, it is also important to consider middle-skill occupations that have entry-level wages below the regional living wage but median wages above it. Since wages generally increase with additional experience and training, students could potentially earn self-sustaining wages with additional apprenticeship or work-based learning opportunities.

As seen in Exhibit 3, middle-skill Health jobs with entry-level wages below the regional living wage have a significant number of annual job openings (labor market demand).



While these occupations have entry-level wages below the \$17.39 per hour California Family Needs Calculator, occupations such as Medical Secretaries; Social and Human Service Assistants; Health Technologists and Technicians, All Other; Phlebotomists; Medical Records and Health Information Technicians; Dental Laboratory Technicians; Veterinary Technologists

and Technicians; Opticians, Dispensing; and Medical Equipment Preparers have median wages higher than the regional living wage as denoted via the gray shading in Exhibit 4.

**Exhibit 4. Health Middle-Skill Jobs with Entry-Level Earnings Below the California Family Needs Calculator in Orange County: Entry-Level and Median Wages**

SOC Code	SOC (Occupational) Title	Demand (Annual Openings)	Entry-Level Wage (25 <sup>th</sup> Percentile)	Median Wage
31-9092	Medical Assistants	1,305	\$13.86	\$16.72
43-6013	Medical Secretaries	1,164	\$14.67	\$17.76
31-1014	Nursing Assistants	1,130	\$12.62	\$14.24
31-1011	Home Health Aides	853	\$11.07	\$12.12
31-9091	Dental Assistants	773	\$14.70	\$17.18
31-9011	Massage Therapists	711	\$11.92	\$14.08
21-1093	Social and Human Service Assistants	508	\$15.71	\$18.17
29-2052	Pharmacy Technicians	316	\$13.99	\$16.88
29-2099	Health Technologists and Technicians, All Other	237	\$17.14	\$19.98
29-2041	Emergency Medical Technicians and Paramedics	179	\$11.12	\$12.06
31-9097	Phlebotomists	162	\$16.95	\$19.70
29-2071	Medical Records and Health Information Technicians*	155	\$16.72	\$23.08
51-9081	Dental Laboratory Technicians	150	\$15.02	\$20.94
29-2056	Veterinary Technologists and Technicians	131	\$14.33	\$18.50
29-2081	Opticians, Dispensing	115	\$16.89	\$19.35
31-9093	Medical Equipment Preparers	95	\$16.07	\$19.35
31-9094	Medical Transcriptionists	51	\$13.94	\$16.98

## FOCUS GROUP INSIGHTS

### Misalignment Between Titles and Duties

This sector brief uses occupational titles from the Standard Occupational Classification (SOC) system in the demand and supply exhibits, as identified and defined in Appendix B. Focus group participants noted that while the occupational title may match the job title used by employers, there is often a misalignment between the typical duties described in the occupational definition and in employers' job descriptions. For example, focus group participants said that Medical Secretaries typically answer the phones for patient inquiries and help the charge nurse. The regional director for employer engagement emphasized that Medical Secretaries are not typically involved with billing and coding, even though those duties are listed in the occupational definition. Regardless of whether or not the job title and occupational title align, actual job duties often differ from organization to organization and frequently do not align with the broad occupational definitions.

**High Demand, Low Wages**

Focus group participants acknowledged that there is high demand for several occupations, but many of them have low entry-level wages. Even though these occupations have low wages, focus group participants agreed that they are good pathway occupations that could help students gain experience for future advancement.

Additionally, the regional director for employer engagement stated that, in addition to education and experience, wages in the Health sector are also sometimes determined by the type of employer. Generally, Medical Assistants employed at a doctor's office will make less than at other places of employment, such as hospitals.

**Licenses and Certifications**

Focus group participants noted that several occupations analyzed in this report, such as Registered Nurse, Nursing Assistants, Pharmacy Technicians, and Dental Assistants require state licensure. However, there is no state licensure requirement for Medical Assistants. Faculty members pointed out that students tend to complete programs that

have state licensure requirements because they need to graduate from a Board-approved educational program in order to sit for the exam. Since students do not need a license or certification to work as a Medical Assistant, completion rates tend to be lower for those programs.

*"For medical assistant, a state certification isn't required yet. While it is good to have [an award], [students] don't need it to get employed, so they don't complete the medical assisting program, they just take a job. I think most of our [student] fallout is from that.  
– North Orange Continuing Education Faculty Member*

## FOCUS GROUP INSIGHTS – THE BIG PICTURE

Focus group participants addressed other issues and challenges that cannot be captured by traditional labor market information and provided insight on the tactics colleges and employers are currently using to address supply gaps in the Health sector.

### How Community Colleges are Filling Supply Gaps

Focus group participants acknowledged the large supply gaps for occupations like Nursing Assistants and Home Health Aides. To address these supply gaps, some colleges have already created new programs or are planning to create new programs in these areas. Saddleback, Santa Ana, and Santiago Canyon have created or plan to create a Certified Nursing Assistant (CNA) program. Saddleback and North Orange Continuing Education are also creating Personal Care Aide programs. In addition to those programs, Saddleback has also created Medical Scribe and Phlebotomy programs.

### How Employers are Filling Supply Gaps

According to focus group participants, employers are using several methods to address supply gaps. Faculty members noted that hospitals usually train current nurses to become specialty nurses such as Operating Room Nurses, Neonatal Intensive Care Unit Nurses, and Critical Care Nurses. Acute care hospitals are training their current nurses for specialty areas using online modules provided by professional training organizations or hospital developed programs. Faculty members also noted that Kaiser Permanente is opening its own medical imaging technology college to create a worker pipeline for Radiologic Technologists that can operate machinery for x-rays, ultrasounds, CT/CAT scans, and MRIs.

### Challenges in Expanding Programs

Focus group participants identified several challenges to expanding programs in the Health sector. Many of these challenges, including the lack of dedicated lab space, difficulty hiring faculty and staff, and high costs for equipment, cut across all sectors. However, some unique challenges for the Health sector are the increased competition from online programs and clinical displacement. While there is a supply gap for many of the top middle-skill jobs, increasing program supply will require increasing clinical placements for students. However, securing clinical placements is difficult because there are limited number of slots in the region. Therefore, the region may not have the capacity to meet those needs.

## KEY FINDINGS: HEALTH

Based on the demand and supply data, as well as the focus group insights analyzed in this brief, the COE identified the following key research findings and recommendations:

### Demand and Supply

**11,799**

annual job openings  
(labor market demand)

**5,911**

average annual program awards  
(labor market supply)

**5,888**

supply gap (number of  
awards needed to close the gap)

### Focus Group Key Findings and Recommendations

Key Finding	Recommendation
<p><b>1. Securing clinical placements is difficult because positions are limited:</b> There are a limited number of clinical sites in the region and Orange County community colleges are competing with non-community college institutions to secure placements for their students.</p>	<p><b>1.</b> To increase clinical placement for Orange County community college students, the region could hire a regional clinical placement coordinator that works with all Orange County community colleges and employers to help place students. If hiring a regional position is not feasible, regional funding could be used to support this work occurring on a local level at the colleges. Placements can help students earn valuable hands-on experience and connections that can be useful when searching for a full-time position.</p>
<p><b>2. Several Health occupations are in high demand but pay low wages:</b> Even though there is a significant need for occupations such as Nursing Assistants and Home Health Aides, entry-level wages for these occupations are below the living-wage for one adult in Orange County.</p>	<p><b>2.</b> To help students move into occupations with higher wages, colleges could consider creating noncredit programs for high-demand, low wage occupations and create a noncredit-to-credit pipeline so students have a pathway to obtain additional education and experience that will help them earn better wages and advance their careers. Additionally, to help students better understand wage expectations and career progression, the Regional Director for Employer Engagement could work with faculty members and administrators to define common career paths and job titles within occupations. This information can then be shared with counselors so that students can learn about their career options and how their earnings potential changes with additional education and experience.</p>

Key Finding	Recommendation
<p><b>3. Supply data for Health occupations is incomplete:</b> The number of awards conferred by some non-community college institutions, such as Western Governors University and Regional Occupational Programs (ROP) are not included in the supply figures. Additionally, the supply numbers do not account for the differences between pre-licensure nursing programs and Registered Nurse to Bachelor's of Science in Nursing (RN-to-BSN) programs. Without a complete picture of training providers and programs, the supply numbers may be understated for certain occupations.</p> <p><b>4. Knowledge, Skills, and Abilities (KSAs) for the sector have not been validated by employers:</b> The OC Sector Analysis Project brief examines job gaps, but does not explore the specific KSAs taught at the colleges and compare them to the labor market's demand for Advanced Transportation and Logistics KSAs.</p>	<p><b>3.</b> To better understand and quantify the supply of qualified students from programs at all educational institutions in Orange County, the COE should work with the Regional Director for Employer Engagement to identify existing Health programs in order to generate a complete list of training providers for Health occupations.</p> <p><b>4.</b> To determine if the region's community colleges are training for the right KSAs, the Health Regional Director for Employer Engagement should convene employers in a "regional advisory group" where employers can review program KSAs, provide feedback, and validate the KSAs' current relevance and demand in the labor market.</p>

## APPENDIX A: METHODOLOGY AND HEALTH DATA DEFINITIONS

The Centers of Excellence for Labor Market Research (COE) prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Emsi, a software program 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).

The California Community Colleges (CCC) define “sectors” by TOP codes. To determine what occupations should be analyzed in this brief, the COE first reviewed the TOP codes associated with the sector and then matched them with the SOC codes. According to the CCC, the following six-digit TOP codes define the Health sector:

TOP6 Program Name	TOP6 Code
Administrative Medical Assisting	1208.20
Alcohol and Controlled Substances	2104.40
Athletic Training and Sports Medicine	1228.00
Cardiovascular Technician	1213.00
Certified Nurse Assistant	1230.30
Clinical Medical Assisting	1208.10
Community Health Care Worker	1261.00
Dental Assistant	1240.10
Dental Hygienist	1240.20
Dental Laboratory Technician	1240.30
Dental Occupations	1240.00
Diagnostic Medical Sonography	1227.00
Dietetic Services and Management	1306.20
Dietetic Technology	1306.60
Electrocardiography	1215.00
Electro-Neurodiagnostic Technology	1212.00
Emergency Medical Services	1250.00
Gerontology	1309.00
Health Facility Unit Coordinator	1208.30
Health Information Coding	1223.10
Health Information Technology	1223.00
Health Occupations, General	1201.00
Home Health Aide	1230.80
Hospital and Health Care Administration	1202.00
Hospital Central Service Technician	1209.00
Licensed Vocational Nursing	1230.20
Medical Assisting	1208.00
Medical Laboratory Technology	1205.00
Medical Office Technology	0514.20
Nursing	1230.00
Nutrition, Foods, and Culinary Arts	1306.00
Occupational Therapy Technology	1218.00
Optical Technology	1219.00
Orthopedic Assistant	1214.00
Other Health Occupations	1299.00

TOP6 Program Name	TOP6 Code
Paramedic	1251.00
Pharmacy Technology	1221.00
Phlebotomy	1205.10
Physical Therapist Assistant	1222.00
Physicians Assistant	1206.00
Polysomnography	1211.00
Psychiatric Technician	1239.00
Radiation Therapy Technician	1226.00
Radiologic Technology	1225.00
Registered Nursing	1230.10
Respiratory Care-Therapy	1210.00
School Health Clerk	1224.00
Speech-Language Pathology and Audiology	1220.00
Surgical Technician	1217.00

Using a TOP-SOC crosswalk, the COE then identified middle-skill jobs for which programs within these TOP codes train. The COE examined more than 850 occupational codes from the Standard Occupational Classification (SOC)<sup>6</sup> system and identified approximately 300 occupational codes as middle-skill jobs.

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.

For this study, the COE analyzed occupations with a labor market demand of at least 50 annual job openings. (For comparison, the average and median demand for an occupation in Orange County is 307 and 63 annual job openings, respectively.)<sup>7</sup> The number of annual job openings estimates employment change and turnover for an occupation each year between 2018 and 2023. Annual job openings include:

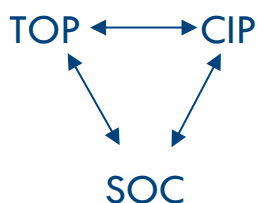
- Job Growth: An employer experiences increased demand for products and hires new employees to increase production. If job growth is zero or negative, then any and all openings are due to replacement needs.
- Replacement Needs: An employer hires replacement workers for employees who leave the workforce or change occupations. Replacement rates are derived from national 10-year, occupation-specific percentages published by the U.S. BLS's Employment Projections program.

<sup>6</sup> SOC is a federal statistical standard used by EDD, BLS and other federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data.

<sup>7</sup> Emsi Data set 2019.2. QCEW Employees + Non-QCEW + Self-Employed. 2018-2023.



The COE then cross-referenced the SOC codes with CIP and TOP codes to compare labor market demand with program supply. The following diagram illustrates this process:



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

Because a TOP/CIP code may train for more than one occupation, simply aggregating all supply from all related codes may overestimate supply for an occupation. Therefore, the COE de-duplicated TOP codes that trained for more than one occupation to avoid counting the program supply more than once. Doing so provides a more accurate representation of the supply gaps in the region by occupation. This information can be seen in the demand and supply tables in Appendix C of this study.

## Qualitative Methodology

An integral aspect of the Orange County Sector Analysis Project was the qualitative data collected during the project’s focus groups. In May 2019, the COE created an advisory group comprised of the Orange County Regional Consortium Director as well as five CTE deans and directors that represented the four community college districts in Orange County. The advisory group created a process and timeline for inviting faculty and administrators to participate in focus groups to better understand where programs exist or do not exist to fill supply gaps and discuss how Orange County’s community colleges could close the supply gaps for the county’s eight priority and emerging sectors.

To create the invite list of faculty and administrators, Regional Directors for Employer Engagement and career education deans at each college were asked to identify faculty and administrators that could represent their respective colleges in the sector-specific focus groups. Once this list was compiled, the career education deans invited faculty and administrators to express their interest in participating in a focus group via email. The email introduced the COE, provided an overview of the Orange County Sector Analysis Project, described the goals of the focus groups, and informed faculty that they would be compensated for their participation, and that lunch would be provided for all participants. All those that stated their interest were then connected with the COE who managed the focus groups scheduling and details.

In order to be as inclusive as possible, 12 focus groups were scheduled for the eight sectors – four sectors had one focus group each and four sectors had two focus groups each, during a three-week period from July to August 2019. All focus groups participants received a confirmation email before the event that included the focus group agenda, their sector-specific draft brief, and a pre-assignment with questions based off of the information contained in the draft sector briefs. Focus group participants were instructed to complete and bring the pre-assignment to the convening so that they were prepared to discuss the data, the challenges they face in their programs, and strategies to close supply gaps. Each focus groups was recorded, with permission of the participants, by the COE solely for transcription purposes.

The COE conducted no more than two focus group sessions per day. During the focus groups the Orange County Sector Analysis Project was explained and then the information contained in the draft sector briefs was presented in detail. Participants were encouraged to ask questions and engage in dialogue throughout the entire focus group session. The COE

took notes of each discussion as well as recorded the sessions, with permission of the participants and solely for transcription purposes.

Following the conclusion of the focus groups, the COE compiled the audio files, transcripts, notes, and pre-assignments to conduct a qualitative analysis of the themes for each focus group and to identify commonalities across multiple focus groups. The findings from this analysis have been highlighted throughout this report in the “Focus Group Insight” sections.

## APPENDIX B: DEFINITIONS FOR HEALTH MIDDLE-SKILL JOBS

The following definitions and sample job titles for each occupation are derived from O\*NET, the nation's primary source of occupational information. The O\*NET database contains hundreds of standardized and occupation-specific descriptors on nearly 1,000 occupations. O\*NET is developed and sponsored by the U.S. Department of Labor<sup>8</sup>

**Clinical Laboratory Technologists and Technicians (SOC 29-2018):** Perform routine or complex medical laboratory tests for diagnosis, treatment, and prevention of disease.

- Microbiology Technologist
- Cytogenetic Technologist
- Cytotechnologist
- Histology Technician
- Specimen Processor

**Community Health Workers (SOC 21-1094):** Assist individuals and communities to adopt healthy behaviors. Conduct outreach for medical personnel or health organizations to implement programs in the community that promote, maintain, and improve individual and community health. May provide information on available resources, provide social support and informal counseling, advocate for individuals and community health needs, and provide services such as first aid and blood pressure screening. May collect data to help identify community health needs. Sample job titles include:

- Community Health Promoter
- Community Health Outreach Worker
- Community Health Program Coordinator/Representative
- HIV Counseling and Testing Services Specialist

**Dental Assistants (SOC 31-9091):** Assist dentist, set up equipment, prepare patient for treatment, and keep records. Sample job titles include:

- Surgical Dental Assistant
- Orthodontic Assistant/Technician
- Certified/Registered Dental Assistant (CDA or RDA)
- Oral Surgery Assistant
- Expanded Function Dental Assistant
- Expanded Duty Dental Assistant

**Dental Hygienists (SOC 29-2021):** Clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop x rays, or apply fluoride or sealants. Sample job titles include:

- Registered Dental Hygienist (RDH)
- Implant Coordinator
- Pediatric Dental Hygienist
- Oral Hygienist
- Dental Nurse

**Dental Laboratory Technicians (SOC 51-9081):** Construct and repair full or partial dentures or dental appliances. Sample job titles include:

- Dental Ceramist
- Dental Technician
- Crown and Bridge Dental
- Porcelain Technician/Finisher
- Orthodontic Laboratory Technician

**Emergency Medical Technicians and Paramedics (SOC 29-2041):** Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities. Sample job titles include:

- Paramedic
- Flight Paramedic
- Multi Care Technician
- Emergency Medical Technician/Dispatcher
- Emergency Medical Technician/Driver
- First Responder

<sup>8</sup> <https://www.onetonline.org/>

**First-Line Supervisors of Protective Service Workers, All Other (SOC 33-1099):** All protective service supervisors not listed separately.

**Health Technologists and Technicians, All Other (SOC 29-2099):** All health technologists and technicians not listed separately. Sample job titles include:

- **Neurodiagnostic Technologists (29-2099.01):** Conduct electroneurodiagnostic (END) tests such as electroencephalograms, evoked potentials, polysomnograms, or electronystagmograms. May perform nerve conduction studies.
- **Ophthalmic Medical Technologists (29-2099.05):** Assist ophthalmologists by performing ophthalmic clinical functions and ophthalmic photography. Provide instruction and supervision to other ophthalmic personnel. Assist with minor surgical procedures, applying aseptic techniques and preparing instruments. May perform eye exams, administer eye medications, and instruct patients in care and use of corrective lenses. Not to be confused with Ophthalmic Medical Technicians (29-2057).
- **Radiological Technicians (29-2099.06):** Maintain and use equipment and supplies necessary to demonstrate portions of the human body on x-ray film or fluoroscopic screen for diagnostic purposes. Not to be confused with Radiological Technologists (29-2034).
- **Surgical Assistants (29-2099.07):** Assist surgeons during surgery by performing duties such as tissue retraction, insertion of tubes and intravenous lines, or closure of surgical wounds. Perform preoperative and postoperative duties to facilitate patient care. Not to be confused with Surgical Technologists (29-2055).

**Healthcare Support Workers, All Other (SOC 31-9099):** All healthcare support workers not listed separately. Sample job titles include:

- **Speech-Language Pathology Assistants (31-9099.01):** Assist speech-language pathologists in the assessment and treatment of speech, language, voice, and fluency disorders. Implement speech and language programs or activities as planned and directed by speech-language pathologists. Monitor the use of alternative communication devices and systems.
- **Endoscopy Technicians (31-9099.02):** Maintain a sterile field to provide support for physicians and nurses during endoscopy procedures. Prepare and maintain instruments and equipment. May obtain specimens.

**Home Health Aides (SOC 31-1011):** Provide routine individualized healthcare such as changing bandages and dressing wounds, and applying topical medications to the elderly, convalescents, or persons with disabilities at the patient's home or in a care facility. Monitor or report changes in health status. May also provide personal care such as bathing, dressing, and grooming of patient. Sample job titles include:

- |                  |                              |                         |
|------------------|------------------------------|-------------------------|
| • Home Attendant | • Direct Care Professional   | • Residential Counselor |
|                  | • Certified Home Health Aide | • In Home Caregiver     |

**Licensed Practical and Licensed Vocational Nurses (SOC 29-2061):** Care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required. Sample job titles include:

- |                                      |                      |                |
|--------------------------------------|----------------------|----------------|
| • Triage Licensed Practical Nurse    | • Private Duty Nurse | • Clinic Nurse |
| • Pediatric Licensed Practical Nurse | • Office Nurse       | • Charge Nurse |

**Massage Therapists (SOC 31-9011):** Perform therapeutic massages of soft tissues and joints. May assist in the assessment of range of motion and muscle strength or propose client therapy plans. Sample job titles include:

- Medical/Registered/Clinical/  
Licensed Massage Therapist
- Licensed Massage  
Practitioner (LMP)
- Certified Massage Therapist
- Bodywork Therapist

**Medical Assistants (SOC 31-9092):** Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician. Sample job titles include:

- Chiropractor Assistant
- Clinical Assistant
- Medical Office Assistant
- Certified Medical Assistant
- Registered Medical Assistant
- Doctor's Assistant

**Medical Equipment Preparers (SOC 31-9093):** Prepare, sterilize, install, or clean laboratory or healthcare equipment. May perform routine laboratory tasks and operate or inspect equipment. Sample job titles include:

- Sterilization Technician
- Medical Supply Technician
- Central Sterile Supply  
Technician (CSS Technician)
- Sterile Processing and  
Distribution Technician
- Certified Registered Central  
Service Technician
- Instrument Technician

**Medical Records and Health Information Technicians (SOC 29-2071):** 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 health care system. Process, maintain, compile, and report patient information for health requirements and standards in a manner consistent with the healthcare industry's numerical coding system. Sample job titles include:

- Health Information Specialist
- Release of Information  
Specialist
- Medical Coder
- Registered Health  
Information Technician (RHIT)
- Medical Records Technician
- Health Information Systems  
Technician

**Medical Secretaries (SOC 43-6013):** Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence. Sample job titles include:

- Unit Clerk
- Medical Office Specialist
- Unit Secretary
- Medical Receptionist
- Front Office Coordinator

**Medical Transcriptionists (SOC 31-9094):** Transcribe medical reports recorded by physicians and other healthcare practitioners using various electronic devices, covering office visits, emergency room visits, diagnostic imaging studies, operations, chart reviews, and final summaries. Transcribe dictated reports and translate abbreviations into fully understandable form. Edit as necessary and return reports in either printed or electronic form for review and signature, or correction. Sample job titles include:

- Transcriptionist
- Pathology Transcriptionist
- Radiology  
Transcriptionist/Radiology  
Clerk
- Radiology Transcriptionist
- Medical Transcriber

**Nursing Assistants (SOC 31-1014):** Provide basic patient care under direction of nursing staff. Perform duties such as feed, bathe, dress, groom, or move patients, or change linens. May transfer or transport patients. Includes nursing care attendants, nursing aides, and nursing attendants. Sample job titles include:

- Certified or Licensed Nursing Assistant (CNA or LNA)
- State Tested Nursing Assistant (STNA)
- Geriatric Nursing Assistant (GNA)
- Patient Care Technician (PCT)
- Patient Care Assistant (PCA)
- Certified Nurse Aide (CNA)

**Occupational Therapy Assistants (SOC 31-2011):** Assist occupational therapists in providing occupational therapy treatments and procedures. May, in accordance with State laws, assist in development of treatment plans, carry out routine functions, direct activity programs, and document the progress of treatments. Generally requires formal training. Sample job titles include:

- Certified Occupational Therapist Assistant (COTA)
- Staff Certified Occupational Therapist Assistant/Licensed (Staff COTA/L)
- Certified Occupational Therapist Assistant/Licensed (COTA/L)

**Opticians, Dispensing (SOC 29-2081):** Design, measure, fit, and adapt lenses and frames for client according to written optical prescription or specification. Assist client with inserting, removing, and caring for contact lenses. Assist client with selecting frames. Measure customer for size of eyeglasses and coordinate frames with facial and eye measurements and optical prescription. Prepare work order for optical laboratory containing instructions for grinding and mounting lenses in frames. Verify exactness of finished lens spectacles. Adjust frame and lens position to fit client. May shape or reshape frames. Includes contact lens opticians. Sample job titles include:

- Optical Technician
- Licensed Dispensing Optician
- Optometric Assistant
- Optometric Technician

**Pharmacy Technicians (SOC 29-2052):** Prepare medications under the direction of a pharmacist. May measure, mix, count out, label, and record amounts and dosages of medications according to prescription orders. Sample job titles include:

- Certified Pharmacy Technician (CPhT)
- Senior Pharmacy Technician
- Accredited Pharmacy Technician
- Lead Pharmacy Technician

**Phlebotomists (SOC 31-9097):** Draw blood for tests, transfusions, donations, or research. May explain the procedure to patients and assist in the recovery of patients with adverse reactions. Sample job titles include:

- Registered Phlebotomist
- Phlebotomist, Medical Lab Assistant
- Patient Service Technician
- Phlebotomy Program Coordinator
- Phlebotomy Technician

**Physical Therapist Assistants (SOC 31-2021):** Assist physical therapists in providing physical therapy treatments and procedures. May, in accordance with State laws, assist in the development of treatment plans, carry out routine functions, document the progress of treatment, and modify specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. Generally requires formal training. Sample job titles include:

- Physical Therapy Assistant (PTA)
- Physical Therapist Assistant and Nurse Aide
- Certified Physical Therapist Assistant (CPTA)
- Physical Therapy Technician
- Per Diem Physical Therapist Assistant (Per Diem PTA)
- Licensed Physical Therapist Assistant

**Radiologic Technologists (SOC 29-2034):** Take x rays and CAT scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes. Includes technologists who specialize in other scanning modalities. Sample job titles include:

## Demand and Supply Analysis: Orange County

- CAT Scan Technologist
- X-Ray Technologist
- Radiological Technologist
- Staff Radiographer
- Radiographer, Mammographer
- Mammography Technologist

**Registered Nurses (SOC 29-1141):** Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required. Includes Clinical Nurse Specialists. Sample job titles include:

- Clinical Nurse Specialist
- Staff Nurse
- Intensive Care Unit Nurse
- Critical Care Registered Nurse
- Pediatric/Psychiatric Clinical Nurse Specialist

**Respiratory Therapists (SOC 29-1126):** Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment. Sample job titles include:

- Respiratory Care Practitioner
- Registered Respiratory Therapist
- Certified Respiratory Therapist
- Staff Therapist
- Cardiopulmonary Technician and EEG Tech (Cardiopulmonary Technician and Electroencephalogram Technician)

**Social and Human Service Assistants (SOC 21-1093):** Assist in providing client services in a wide variety of fields, such as psychology, rehabilitation, or social work, including support for families. May assist clients in identifying and obtaining available benefits and social and community services. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or dependent care. Sample job titles include:

- Social Work Assistant
- Community Coordinator
- Residential Assistant
- Outreach Specialist
- Family Support Worker
- Addictions Counselor Assistant

**Surgical Technologists (SOC 29-2055):** Assist in operations, under the supervision of surgeons, registered nurses, or other surgical personnel. May help set up operating room, prepare and transport patients for surgery, adjust lights and equipment, pass instruments and other supplies to surgeons and surgeon's assistants, hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments. Sample job titles include:

- Operating Room Technician/Technologist
- Certified Surgical Tech/First Assistant
- Certified Surgical Technologist (CST)
- Surgical Scrub Technician/Technologist
- Operating Room Surgical Technician
- Certified Surgical Technician

**Veterinary Technologists and Technicians (SOC 29-2056):** Perform medical tests in a laboratory environment for use in the treatment and diagnosis of diseases in animals. Prepare vaccines and serums for prevention of diseases. Prepare tissue samples, take blood samples, and execute laboratory tests, such as urinalysis and blood counts. Clean and sterilize instruments and materials and maintain equipment and machines. May assist a veterinarian during surgery. Sample job titles include:

- Veterinary Laboratory Technician
- Registered Veterinary Technician (RVT)
- Veterinary Nurse
- Veterinary Assistant
- Certified Veterinary Technician (CVT)
- Licensed Veterinary Technician (LVT)

## APPENDIX C: HEALTH DEMAND AND SUPPLY DATA

The following tables compare labor market demand and program supply by occupation. Because a TOP/CIP code may train for more than one occupation, simply aggregating all supply from all related codes may overestimate supply for that occupation. Therefore, the COE de-duplicated TOP codes that train for more than one occupation to avoid counting program supply more than once. This de-duplication process is denoted by the “Accounted for Above” statements in the tables on the following pages.

Additionally, the COE reviewed program data from the LaunchBoard<sup>9</sup> and the statewide COE Supply Table<sup>10</sup> and identified conflicting information. For certain occupations, LaunchBoard indicates that a college has a program for that occupation, but the COE Supply Table does not show program data for that college, and vice versa. These discrepancies are marked with the following:

+The COE Supply Table indicates that this college supplies awards for this TOP code, but this college is not listed in the LaunchBoard

\*LaunchBoard indicates that this college/school supplies awards for this TOP code, but this college is not listed in COE Supply Table

The demand and supply tables in the following pages have three categories:

1. **Supply Gap** – If Average Annual Openings exceed Average Annual Awards by more than 25 percent, then the cell is shaded in light green.
2. **Supply Met** – If Average Annual Openings is within 25 percent +/- of Average Annual Awards, then the cell is shaded in light blue.
3. **Oversupply** – If Average Annual Openings exceed the Average Annual Awards by more than 25 percent, then the cell is shaded in red.

<sup>9</sup> [calpassplus.org/LaunchBoard/Home.aspx](http://calpassplus.org/LaunchBoard/Home.aspx)

<sup>10</sup> [coeccc.net/COE/media/SupplyandDemandPageDocuments/Supply-2014-17\\_Feb-2018.xlsm](http://coeccc.net/COE/media/SupplyandDemandPageDocuments/Supply-2014-17_Feb-2018.xlsm)



## DEMAND AND SUPPLY DATA FOR TOP HEALTH MIDDLE-SKILL JOBS IN ORANGE COUNTY

+ The COE Supply Table indicates that this college/school supplies awards for this TOP code, but this college is not listed in the LaunchBoard

\* LaunchBoard indicates that this college/school supplies awards for this TOP code, but this college is not listed in COE Supply Table

~ Noncredit awards

^ North Orange Continuing Education is also known as North Orange Adult in the California Community Colleges Chancellor's Office Management Information System

# RN-to-BSN program

‡ RN-to-BSN and pre-licensure programs

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Registered Nurses	1,783	Supply Met	1,781	Registered Nursing	1230.10	Cypress	79
						Golden West	85
						Saddleback	212
						Santa Ana	93
					CIP 51.3801	Brandman University#	21
						California State University-Fullerton‡	259
						Career Networks Institute	84
						Concordia University-Irvine	89
						Pacific College	18
						Stanbridge College	10
						University of Phoenix-California#	434
						West Coast University-Orange County	397
Licensed Practical and Licensed Vocational Nurses	652	Supply Met	532	Licensed Vocational Nursing	1230.20	Saddleback+	3
					CIP 51.3901	American Career College-Anaheim	116
						California Career Institute	43
						Career Networks Institute	121
						Pacific College	94
Dental Hygienists	235	Supply Gap	18	Dental Assisting/Assistant	CIP 51.0601	Already Accounted For	0
				Dental Hygienist	1240.20	Cypress	18

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Clinical Laboratory Technologists and Technicians	234	Supply Gap	21	Biotechnology and Biomedical Technology	0430.00	Irvine Valley*	0
						Santa Ana*	0
						Santiago Canyon*	0
						Fullerton*	0
				Electron Microscopy	0934.70	No Programs	0
				Laboratory Science Technology	0955.00	Fullerton+	1
Healthcare Support Workers, All Other	156	Supply Gap	48	Medical Laboratory Technology	1205.00	Saddleback	20
				Health Facility Unit Coordinator	1208.30	No Programs	0
				Speech/Language Pathology and Audiology	1220.00	Orange Coast	23
Physical Therapist Assistants	155	Supply Gap	21	Physical Therapist Assistant	1222.00	Santa Ana	25
Respiratory Therapists	144	Supply Met	157	Respiratory Care/Therapy	1210.00	North Orange Adult~^	21
					CIP 51.0908	Orange Coast	16
						American Career College-Anaheim	65
Radiologic Technologists	102	Oversupply	134	Radiologic Technology	1225.00	Concorde Career College-Garden Grove	76
						Cypress	58
					CIP 51.0911	Orange Coast	21
First-Line Supervisors of Protective Service Workers, All Other	87	Supply Gap	0	N/A	N/A	Modern Technology School	55
Surgical Technologists	83	Supply Met	90	Surgical Technology/Technologist	CIP 51.0909	No Programs	0
						American Career College-Anaheim	48
						Career Networks Institute	41
Occupational Therapy Assistants	79	Oversupply	155	Occupational Therapy Technology	CIP 51.0803	North-West College-Santa Ana	1
						Santa Ana	52
						American Career College-Anaheim	8
						Stanbridge College	95

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Community Health Workers	54	Supply Gap	0	Community Health Care Worker	1261.00	No Programs	0
				Gerontology	1309.00	Already Accounted For	0
				Human Services	2104.00	Already Accounted For	0
				Alcohol and Controlled Substances	2104.40	Already Accounted For	0
					CIP 51.1501	Already Accounted For	0
				Disability Services	2104.50	North Orange Adult*	0

## DEMAND AND SUPPLY DATA FOR HEALTH MIDDLE-SKILL JOBS WITH ENTRY-LEVEL WAGES BELOW CALIFORNIA FAMILY NEEDS CALCULATOR IN ORANGE COUNTY

+The COE Supply Table indicates that this college/school supplies awards for this TOP code, but this college is not listed in the LaunchBoard

\*LaunchBoard indicates that this college/school supplies awards for this TOP code, but this college is not listed in COE Supply Table

~ Noncredit awards

^ North Orange Continuing Education is also known as North Orange Adult in the California Community Colleges Chancellor's Office Management Information System

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Medical Assistants	1,305	Supply Met	1,041	Medical Office Technology	0514.20	Coastline*	0
				Medical Assisting	1208.00	Orange Coast	34
						Saddleback	36
						North Orange Adult~^	106
						Santa Ana+	216
					CIP 51.0801	Allied American University	84
						American Career College-Anaheim	195
						California Career Institute	8
						Career Networks Institute	24
						Concorde Career College-Garden Grove	149
						InterCoast Colleges-Anaheim	7
						InterCoast Colleges-Roseville	4
						Modern Technology School	7
						North-West College-Santa Ana	21
						South Coast College	32
						United Education Institute-Anaheim	47
				Clinical Medical Assisting	1208.10	Saddleback	28
						Orange Coast*	0
						North Orange Adult*	0
				Administrative Medical Assisting	1208.20	Saddleback	22
						Santiago Canyon~	21
						Santa Ana*	0

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
						North Orange Adult*	0
Medical Secretaries	1,164	Supply Gap	0	Medical Office Technology	0514.20	Already Accounted For	0
				Administrative Medical Assisting	1208.20	Already Accounted For	0
						Already Accounted For	0
Nursing Assistants	1,130	Supply Gap	10	School Health Clerk	1224.00	California Career Institute+	10
				Certified Nurse Assistant	1230.30	No Programs	0
Home Health Aides	853	Supply Gap	25	Home Health Aide	1230.80	No Programs	0
				Gerontology	1309.00	Coastline	13
						Cypress	4
						Saddleback	8
						Santa Ana*	0
						Santiago*	0
Dental Assistants	773	Supply Gap	326	Dental Assistant	CIP 51.0601	American Career College- Anaheim	70
						Concorde Career College- Garden Grove	147
						United Education Institute- Anaheim	52
					1240.10	Cypress	27
						Orange Coast	30
Massage Therapists	711	Supply Gap	406	Massage Therapy	1262.00	Fullerton	5
					CIP 51.3501	Advance Beauty College	49
						American Career College- Anaheim	20
						American Institute of Massage Therapy	28
						Career Networks Institute	9
						Coastline Beauty College	94
						North-West College-Santa Ana	2
						Santa Ana Beauty College	199

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Social and Human Service Assistants	508	Supply Met	384	Community Health Care Worker	1261.00	No Programs	0
				Family and Consumer Sciences, General	1301.00	Orange Coast+	1
						Saddleback	1
						Santa Ana	1
				Parenting and Family Education	1305.60	North Orang Adult*	0
						Santiago Canyon	0
				Foster and Kinship Care	1305.70	No Programs	0
				Family Studies	1308.00	Saddleback	1
						North Orange Adult*	0
				Human Services	2104.00	Coastline	56
						Cypress	59
						Orange Coast+	15
						Saddleback	21
						Santa Ana+	86
						Golden West*	0
				Alcohol and Controlled Substances	2104.40	Cypress	24
						Saddleback	33
						Coastline*	0
						Santiago Canyon*	0
					CIP 51.1501	InterCoast Colleges-Anaheim	73
						InterCoast Colleges-Roseville	13
				Disability Services	2104.50	North Orange Adult*	0
Pharmacy Technicians	316	Supply Met	287	Pharmacy Technology	1221.00	Santa Ana	41
						North Orange Adult~^	60
					CIP 51.0805	Allied American University	63
						American Career College-Anaheim	109
						Career Networks Institute	11
						North-West College-Santa Ana	3

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Health Technologists and Technicians, All Other	237	Supply Met	183	Polysomnography	1211.00	Orange Coast	9
				Electro-Neurodiagnostic Technology	1212.00	Orange Coast	5
				Physical Therapy Technician/Assistant	CIP 51.0806	American Career College-Anaheim	14
						Concorde Career College-Garden Grove	32
						Stanbridge College	33
				Surgical Technology/Technologist	CIP 51.0909	American Career College-Anaheim	48
						Career Networks Institute	41
						North-West College-Santa Ana	1
Emergency Medical Technicians and Paramedics	179	Supply Gap	45	Emergency Medical Services	1250.00	Saddleback	20
						Santa Ana*	0
						Orange Coast*	0
				Paramedic	125100	Saddleback	25
Phlebotomists	162	Supply Gap	4	Phlebotomy	1205.10	Saddleback	2
					CIP 51.1009	Modern Technology School	2
Medical Records and Health Information Technicians	155	Oversupply	229	Medical Office Technology	0514.20	Already Accounted For	0
				Health Information Technology	1223.00	Cypress	17
					CIP 51.0707	Saddleback	18
						American Career College-Anaheim	13
				Health Information Coding	1223.10	Cypress	1
					CIP 51.0713	North Orange Adult*	0
						Allied American University	30
						American Career College-Anaheim	97
						InterCoast Colleges-Anaheim	7
						United Education Institute-Anaheim	46
Dental Laboratory Technicians	150	Supply Gap	0	Dental Assisting/Assistant	CIP 51.0601	Already Accounted For	0
				Dental Laboratory Technician	1240.30	No Programs	0

OCCUPATIONAL TITLE	AVERAGE ANNUAL OPENINGS (2018-23)	SUPPLY GAP/ SUPPLY MET/ OVERSUPPLY	AVERAGE ANNUAL AWARDS (2015-17)	TOP6 TITLE	TOP6 OR CIP	COLLEGE	COLLEGE SUPPLY (3-YR AVG)
Veterinary Technologists and Technicians	131	Supply Gap	9	Veterinary Technician (Licensed)	0102.10	Stanbridge College+	9
Opticians, Dispensing	115	Supply Gap	0	N/A	N/A	No Programs	0
Medical Equipment Preparers	95	Supply Gap	0	Hospital Central Service Technician	1209.00	No Programs	0
Medical Transcriptionists	51	Supply Gap	5	Medical Office Technology	0514.20	No Programs	0
				Hospital and Health Care Administration	1202.00	University of Phoenix-California	5
				Health Information Coding	1223.10	Already Accounted For	0
					CIP 51.0713	Already Accounted For	0