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# Orthopedic Technician Labor Market Analysis

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Prepared by Center of Excellence for Labor Market Research  
Los Angeles and Orange Counties

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## **Introduction**

The purpose of this research brief is to assess the labor market demand and potential training gap for orthopedic technicians (OT) in Los Angeles and Orange Counties. Unfortunately, the demand for OTs in the region is currently not quantifiable, as the Bureau of Labor Statistic's coding system (Standard Occupational Classification - SOC) does not exist for this occupation. Without sufficient data to analyze trends for employment, it is not possible to conduct a training gap assessment — the difference between the current and future employment demand and the needed supply of qualified applicants.

Due to these data limitations, information was obtained by conducting telephone interviews with employers, professional associations, representatives from community college programs, practicing OTs, and a review of current job postings on Indeed.com. For a list of individuals interviewed, see Appendix A.

While it's likely that most employers want to hire a certified OT, sufficient OTs in the labor pool with this qualification are not available in many parts of the state. As a result, employers may be pressed to hire an OT without certification, especially if the applicant has satisfactory experience in the field. As there is only one recognized OT training program, located at Grossmont College in El Cajon, this hinders students in Los Angeles and Orange Counties from obtaining training and certification. It also limits the opportunity for employment by program completers if they are not able nor willing to relocate from the greater San Diego region.

Based on information and data obtained for this occupation, it is recommended that colleges in Los Angeles and Orange Counties who are considering developing an OT program would be best served by creating partnerships with regional health care organizations to further explore, identify and validate the labor market demand. If a training gap is identified, these partnerships may facilitate the development of the employer organization as a site for the required student clinical practicum. Colleges may also want to further explore the acceptable entry routes from other allied health care occupations or the military to an OT and/or to sit for the OT certification exam. Since changes are also underway for requirements to sit for the certification exam and exam renewal, and CEU requirements, it will be important to keep abreast of these updates.

## **Occupation**

Orthopedic technicians are allied health care professionals who assist orthopedic surgeons in the practice of musculoskeletal medicine. Duties include the application, adjustments and removal of plaster and synthetic casts, canes, crutches, walkers, simple braces and prosthetics, and may also assist the orthopedic surgeon in surgery. In addition, an OT performs routine office procedures, and assists nursing staff with general patient support duties. OTs work in a variety of health care settings including hospitals, outpatient clinics, and doctor's offices. OTs work with patients of all ages or specialize in a specific age group, such as pediatrics.

**Job Titles:** Orthopedic (also spelled orthopaedic) technicians may also be called orthopedic technologists or orthopedic assistants. Job titles used are based on what the employer deems appropriate and/or what each state decides to use, as there are no state-by-state regulations for job titles, including California.

**SOC Code:** The job title, Orthopedic Technician, does not have a Standard Occupational Classification (SOC) code or title, therefore, employment and wage data for current and projected jobs from public sources is not available. This precludes conducting a training gap assessment for Los Angeles and Orange Counties.

**Related Occupations:** There are several allied health care occupations with SOCs that can be considered somewhat related to OTs —medical assistants, surgical assistants, medical appliance technicians, and athletic trainers. Medical appliance technician is the only occupation in this group where the SOC code also includes the job title orthopedic technician.<sup>1</sup>

While these occupations may have some very broad common tasks related to those of OTs, it is important to note they have different training, certification and/or licensing requirements, and the scope of practice for their profession may not be consistent with the duties of OTs.<sup>2</sup> For example, a major task for OTs is casting of fractures, which is outside the legal scope of practice for medical assistants in California. Table 1 summarizes the comparison between these allied health occupations and OTs.

**Table 1: Comparison of Common Duties:  
Related Allied Health Occupations and Orthopedic Technicians**

<b>Occupation/SOC</b>	<b>Definition/Duties</b>	<b>Orthopedic Technician Definition/Duties</b>
Medical Assistants 31-9092	Perform administrative and certain clinical duties under the direction of a physician.	Orthopedic Technicians perform administrative and clinical duties under the direction of an Orthopedic Surgeon.
Surgical Assistants 29-2099	Assist surgeons during surgery. Perform preoperative and postoperative duties to facilitate patient care.	Orthopedic Technicians assist Orthopedic Surgeons in surgery, as well as perform preoperative and postoperative patient care duties.
Medical Appliance Technician 51-9082	Construct, fit, maintain, or repair medical support devices, such as braces, orthotics and prosthetic devices, joints, arch supports, and other surgical and medical appliances.	Orthopedic Technicians apply, adjust, and remove medical support devices, such as casts, simple braces and prosthetics.
Athletic Trainers 29-9091	Evaluate and advise individuals to assist recovery from or avoid athletic-related injuries or illnesses, or maintain physical fitness. May provide first aid or emergency care. Apply protective or injury preventive devices – tape, bandages, splints or braces to ankles, fingers, and wrists. Assess and report progress to coaches or physicians.	Orthopedic Technicians perform evaluations and advise patients on their care and treatment plan. They may administer first aid procedures in emergency situations. They apply, adjust and remove medical support devices, and record and report patient conditions and progress to physicians and others in the health care team.

Source: O\*NET

<sup>1</sup> <http://www.onetcodeconnector.org/ccreport/51-9082.00>

<sup>2</sup> <http://nebula.wsimg.com/4e7e5f4327f9924789f1e2518b05d8b6?AccessKeyId=38FDA6E1414A79088C37&disposition=O&alloworigin=1>

## **Certifying Boards and Professional Associations**

The following boards and professional associations define education requirements and provide testing and certification that measure current standards of competent practice. Some also provide ongoing training to satisfy required continuing education units (CEUs). These associations feature member benefits as career advancement through certification, continuing education, networking and job opportunities.

*A description of Orthopedic Technician certifying boards and professional associations is provided below. The boards and associations will be referred to by their respective acronyms in the remainder of this report.*

**National Board for Certification of Orthopaedic Technologists (NBCOT):** Credentialing agency that provides certification for Orthopaedic Technologists (OTC). [Note: NBCOT indicated they have been trying for some time to convince the Bureau of Labor Statistics, Department of Labor to create a separate SOC for OTs without success. They also report that they regularly receive calls from individuals in California interested in attending an OT training program, but the only one recognized is in El Cajon, CA.]

[www.nbcot.net](http://www.nbcot.net)

**The American Society of Orthopedic Professionals (ASOP):** Awards professional title "Registered Orthopedic Technologist" (ROP) through their online exam. Also provides ongoing free CEU training to registered OTs, and conducts fee-for-service training to health care organizations for their employees upon request. [www.asop.org](http://www.asop.org)

**National Association of Orthopaedic Technologists (NAOT):** Oversees educational requirements for schools with established OT programs (approved curricula for either certificate or associate degree) that meet standards set by the organization. Offers ongoing continuing education regionally and through the annual national symposium. [www.naot.org](http://www.naot.org)

**Association of Orthopaedic Technologists California (AOTC):** Statewide affiliate of NAOT. Provides continuing education, workshops and seminars for California members. <http://www.aotconline.com>

## **OT Pathways: Employer Qualifications and Professional Designations**

Students interested in pursuing a career as an orthopedic technician need a high school diploma, followed by a training program available through a hospital, community college, technical school or the military.

### ***Qualifications required by employers***

The following summary is based on a review of 13 OT employer job postings listed for California on Indeed.com from March 2016 to the present. Job qualifications vary among employers. All employers require some experience between 0 to 3 years, most require 1-2 years; completion of an OT training program; several openings require the professional designation "certified", two prefer "certified", one requires "registered", and the remainder don't mention either "certified" or "registered" in the job posting; almost all require American Heart Association BLS and CPR certification.

### *Professional designations*

There are two professional designations for OTs — certified and registered. Both professional designations claim to demonstrate qualified and competent clinicians. They are described below and compared in Table 2 on Page 5. There are also advanced professional designations — OT Surgery Certified (OT-SC) and Physician Assistant – Orthopedics (OPA-C), but these are not covered in this brief.

It is important to note while employers may require or desire certified OTs upon hiring, some OTs let their certification lapse after they are employed. This may be a result of their employer not requiring maintenance of the certification, especially if the OT is performing satisfactorily on the job; the considerable expense to take annual CEU training and time off work; fees for certification exam renewal and preparation time; or for other reasons.

Besides certification, OTs and other allied health care workers can become registered. For example, several medical assistants at PIH Health in Whittier who have been casting for years recently became registered OTs through ASOP. There is insufficient evidence to inform how widespread the practice is of using medical assistants as OTs.

Several of the people interviewed for this report indicated there are changes underway for both professional designations in terms of requirements to sit for the certification exam and exam renewal, and CEU requirements.

### *Certified Orthopedic Technologist (OTC)*

The NBCOT oversees the certification of Orthopedic Technologists, however, the NAOT sets the educational requirements that need to be satisfied before the certification test may be taken. To qualify to sit for the certification examination an OT must meet one of following criteria: two years of full time employment, completion of an OT training program, or certified/licensed as an athletic trainer with a minimum of six months (1,040 hours) full time employment specific to orthopedic technology.

Once one of these prerequisites is met, an OT must pass an examination covering the assessment of patients; applying casts, splints and braces; applying and adjusting traction; and surgical procedures and protocols.

NBCOT provided data on the number of OTCs in California for this report. There are currently 419 OTCs with the majority living in the greater San Diego area. See Appendix B for a breakdown of certifications in California by city. Since Grossmont College in El Cajon is the only education provider recognized by NAOT, its program completers are most likely to be living and employed in this region. Although some graduates have moved out of the area to accept jobs in other parts of the state.

**Registered Orthopedic Technician (ROP)**

Of the 2,700 ROPs nationally, ASOP estimates approximately 10% (270) reside in California. The exact number is not tracked by state or city as the association only collects email addresses of those who pass the exam. Many ROPs are also OTCs.

**Table 2: Comparison of Requirements for OTC and ROP Professional Designations**

	<b>Certified Orthopedic Technologist (OTC) through NBCOT</b>	<b>Registered Orthopedic Technician (ROP) through ASOP</b>
<b>Fees</b>	\$425 application & exam fee	\$200 membership fee Exam is free
<b>Renewal</b>	Every 6 years Complete 120 CEUs OR Retest & Pass for \$425	Every 2 years
<b>Continuing Education Units</b>	20 CEUs every year	12 CEUs every year
<b>Exam Content</b>	Orthopedic assessment, casting & immobilization, traction, surgery	Orthopedic anatomy & physiology, casting, some traction, patient safety
<b>Testing</b>	Test Sites in Whittier & Long Beach No open book Dates: Feb, June, Aug, Nov	Online (anytime) Open book 3 hours to complete
<b>Minimum Experience</b>	2 years (notarized physician verification)	1 year (no documentation required)
<b>Affiliations</b>	Grossmont College (El Cajon, CA)	U.S. Army, Kaiser, UCLA Medical Center, and many more hospitals/clinics requesting specialized training for their employees (ER staff, athletic trainers, MA's, RNs, etc.)

**Advanced Career Pathways**

There are several advanced career pathways for OTs including orthotists and prosthetists (SOC 29-2091.00), and medical sales (i.e. companies that make fiber glass/plastic materials used in orthopedics). Orthotists and prosthetists design, measure, fit and adapt orthopedic braces, appliances or prostheses, such as limbs or facial parts for patients with disabling conditions. Orthotists and prosthetists require a master's degree; medical salespersons require a minimum of a bachelor's degree.

**Employment Outlook and Wages**

As there is no employment data for OTs available from public sources, an informal assessment of the potential number of OTs in California was conducted by obtaining the number of certified and registered OTs from their respective certifying boards or associations. There are 419 certified OTs and approximately 270 registered OTs, with a portion of these being duplicative.

To conduct a rough projection of the need for additional OTs, it was suggested that there may be a formula or ratio applied to determine the optimal number of OTs to orthopedic surgeons, or using current and projected patient volume for a particular health care setting to assess the need for more OTs.

Several persons interviewed stated that hiring of OTs spiked 10-15% after the introduction of the Affordable Care Act (ACA) due to the increased number of newly insured members and the aging population, but this trend is not expected to be ongoing for some employers. Hiring is estimated on a yearly basis, taking into consideration the volume of patients and their orthopedic requirements and anticipated medical treatments. The average age of practicing OTs is estimated to be between 25 and 60. While there are some older OTs in the workforce, pending retirements are not anticipated to be a major factor that would affect the number of required replacement personnel in the near term.

Wages for OTs are reported to be in the low to high \$40,000/year range (about \$20 per hour to start), but this depends upon the region. However, with overtime an experienced OT can potentially make close to a 6-figure income, more likely in a hospital setting. Kaiser Permanente is cited as providing the highest wages in the state for OTs.

### **Education Programs and Training Supply**

Currently, there are no Orthopedic Technician programs in the region. There are two community colleges in California that have Orthopedic Technician programs – Grossmont College in El Cajon (San Diego region), and West Valley College in Saratoga (Bay region).

Established in 1981, Grossmont College's Orthopedic Technology program offers a one-year certificate, or the option of an A.S. degree with additional general education units. This Orthopedic Technology program is the only one in California that is recognized by NAOT, and completion of the program leads to eligibility to become certified through NBCOT. On average, the program accepts and enrolls up to 24 students each year as a cohort beginning in the fall semester and finishing at the end of the summer session. Program completers are most often employed by area hospitals and clinics, but some move to other areas in the state for available jobs.

The Grossmont College program is currently undergoing an internal review to determine whether to add courses to the existing certificate and increase the number of hours required for the clinical practicum.

West Valley College offers a one-year Orthopedic Technician certificate that enhances career development and job opportunities for Clinical or Medical Assistant students.

Table 3 displays the number of students completing the program by award type for both community colleges. The California Community Colleges' Taxonomy of Program (TOP) code is listed as Orthopedic Assistant.

**Table 3: Orthopedic Assistant program completions (Statewide)**

TOP	Program	College	Award	Annual 2012-2013	Annual 2013-2014	Annual 2014-2015
121400	Orthopedic Assistant	Grossmont	A.S.	9	7	12
			Certificate (24 Units)	9	21	17
	Orthopedic Technician	West Valley	Certificate (17 units)	5	6	3
<b>TOTAL</b>				<b>23</b>	<b>34</b>	<b>32</b>

Source: [www.datamart.cccco.edu](http://www.datamart.cccco.edu)

### Training Gap Assessment

Due to the lack of available employment data, a training gap assessment cannot be conducted for orthopedic technicians in Los Angeles and Orange Counties.

Currently, the only available information is the number of awards conferred by the two community colleges that offer an OT program. The supply of OTs from the two community colleges averages 30 annually over the three-year period 2012-2015. While data was obtained on the number of current certified and registered OTs in the state, there is likely a sizable number of practicing OTs without certification or registration, which would increase the total number of OT employed.

Without exact estimates the next best strategy is to understand how employers might currently base and/or project OT future new employment openings or replacement jobs. Employers may use data on patient volume related to the number or type of services performed or perhaps base the number on a ratio between orthopedic surgeons and OTs to determine the optimal number of OTs they employ.



**Appendix A: Telephone interviews conducted between June 30 and July 21, 2016**

<p>Nicole Anderson, OTC  Lead Orthopaedic Technician  St. Joseph Health, St. Jude Heritage Medical  Group, Orthopedics  Fullerton, CA  (562) 665-7294</p>	<p>Linda Campbell  Administrative Director, Surgical Specialties  PIH Health Physicians  Whittier, CA  (562) 789-4468 x11466</p>
<p>Charles Barocas  Executive Director  The American Society of Orthopedic  Professionals (ASOP)  Seminole, FL  (727) 394-1700</p>	<p>Chris Rice  Orthopedic Technician Program Director  Grossmont College  El Cajon, CA  (619) 890-3209  [Also employed as an OT by Kaiser Permanente]</p>
<p>Jeffery J. Virgo, OTC, OT-SC, OPA-C  Chairman  National Board for Certification of Orthopaedic  Technologists, Inc. (NBCOT)  Syracuse, NY  (866) 466-2268</p>	

**Appendix B: Certified OTs in California by City**

City	Number of certified Orthopedic Technicians
San Diego	69
El Cajon	17
La Mesa	15
Modesto	15
Santee	14
Fontana	11
Lakeside	9
Riverside	8
Spring Valley	8
Corona	7
Los Angeles	6
Chula Vista	5
Lemon Grove	5
Oceanside	5
Ramona	5
San Bernardino	5
Colton	4
Encinitas	4
Fresno	4
Huntington Beach	4
National City	4
Rancho Cucamonga	4
Redding	4
San Marcos	4
Whittier	4
Alpine	3
Anaheim	3
Buena Park	3
Carlsbad	3
Long Beach	3
Menifee	3
Moreno Valley	3
Palmdale	3
Santa Ana	3
Temecula	3
West Covina	3
Aliso Viejo	2
Bakersfield	2
Chico	2
Costa Mesa	2

Escondido	2
Fairfield	2
Garden Grove	2
Gardena	2
Hemet	2
Hesperia	2
Jamul	2
Lakewood	2
Lemoore	2
Norwalk	2
Oakdale	2
Ontario	2
Pacoima	2
Redondo Beach	2
Reseda	2
Rialto	2
Ripon	2
S. Lake Tahoe	2
Sacramento	2
San Clemente	2
San Pedro	2
San Ysidro	2
Santa Clara	2
Stockton	2
Sylmar	2
Tustin	2
Upland	2
Vacaville	2
Victorville	2
Wilmington	2
Winchester	2
Beaumont	1
Boulder Creek	1
Brentwood	1
Burbank	1
Canyon Country	1
Cardiff by the Sea	1
Carmichael	1
Cloverdale	1
Davis	1
Eastvale	1
El Monte	1
Fallbrook	1
Fillmore	1

Fremont	1
Fullerton	1
Galt	1
Gold River	1
Harbor City	1
Hawthorne	1
Highland	1
Hughson	1
Jenner	1
La Jolla	1
La Puente	1
Laguna Niguel	1
Lancaster	1
Larkspur	1
Littlerock	1
Livingston	1
Loma Linda	1
Mammoth Lakes	1
Milpitas	1
Montclair	1
Montebello	1
Murrieta	1
Napa	1
Norco	1
North Hollywood	1
Northridge	1
Novato	1
Pacifica	1
Palo Alto	1
Panorama City	1
Petaluma	1
Phelan	1
Pomona	1
Poway	1
Rancho Mirage	1
Rancho Palos Verdes	1
Rancho Santa Margarita	1
Redlands	1
Rolling Hills Estates	1
Rosamond	1
Roseville	1
San Dimas	1
San Fernando	1
San Francisco	1

San Jose	1
San Mateo	1
San Ramon	1
Saratoga	1
Shasta Lake	1
Simi Valley	1
Soulsbyville	1
South Lake Tahoe	1
Sun Valley	1
Tarzana	1
Tecate	1
Torrance	1
Ukiah	1
Valencia	1
Ventura	1
West Sacramento	1
Woodland Hills	1
Yorba Linda	1
Yucaipa	1
<b>Total OTCs in CA</b>	<b>419</b>

Source: NBCOT