



Health Care

LABOR MARKET ANALYSIS
SAN DIEGO COUNTY

October 2014





Foreword: Vision for San Diego

I am pleased to share with you the Health Care: Labor Market Analysis report. This report is one in a series of five published this year. We identified five regional high-priority sectors for an in-depth assessment of employer needs: Advanced Manufacturing, Life Sciences, Information and Communication Technologies, Clean Energy and Health Care.

It is estimated that one in every 10 jobs in San Diego is health services-related. The 12 occupations in our research are expected to expand at a rate of 13 percent over the next five years. Its projected rapid employment growth and opportunities for on-the-job training, combined with reported current and future skills shortage, placed Health Care on our list of San Diego's top five priority sectors.

Our findings are a result of a collaboration with the San Diego and Imperial Counties Community Colleges Association (SDICCCA). These reports represent the first step in cooperative, sector-based strategies for workforce development in our region. Together, the San Diego Workforce Partnership (SDWP) and SDICCCA conducted online surveys, in-person interviews and focus groups of regional employers from the Health Care sector. We delved deep, asking questions that would give us insight into the jobs that can be filled with an associate degree or short-term training. Our findings and recommendations paint a picture of where we are and where we should be headed in our workforce planning.

With nearly 1.6 million people in the regional workforce, it is important for us to continuously review the state of our industries and identify job potential for our burgeoning workforce. We need to inform the unemployed, the underemployed and the yet-to-be-employed of which careers will provide an upward trajectory and meet the needs of our regional employers. SDWP is committed to funding research and job training programs that will ensure every business in our region has access to a skilled workforce and every job seeker has access to meaningful employment.

Together we will build our region's skilled and prosperous workforce.



A handwritten signature in black ink, appearing to read 'Peter Callstrom', written in a cursive style.

Peter Callstrom, President and CEO
San Diego Workforce Partnership





Table of Contents

EXECUTIVE SUMMARY2

INTRODUCTION3

INDUSTRY TRENDS.....4

INDUSTRY OVERVIEW6

OCCUPATIONAL OVERVIEW7

REGIONAL EDUCATION AND TRAINING.....20

TRAINING GAP ANALYSIS.....22

CONCLUSIONS AND RECOMMENDATIONS23

APPENDIX A: OCCUPATIONAL PROFILES27

 Health Care Social Workers27

 Physician Assistants28

 Respiratory Therapists29

 Registered Nurses30

 Medical and Clinical Laboratory Technologists31

 Medical and Clinical Laboratory Technicians32

 Licensed Practical and Licensed Vocational Nurses33

 Medical Records and Health Information Technician34

 Home Health Aide.....35

 Nursing Assistants36

 Occupational Therapy Assistants37

 Medical Assistants38

APPENDIX B: CAREER LATTICES39

APPENDIX C: DEFINITIONS48

APPENDIX D: METHODOLOGY50

APPENDIX E: CROSSWALKS BETWEEN OCCUPATIONS AND PROGRAMS.....56

APPENDIX F: REGIONAL COMMUNITY COLLEGES HEALTH PROGRAMS58

APPENDIX G: EDUCATION PROGRAM COMPLETIONS.....60

APPENDIX H: MAP OF HEALTH CARE INSTITUTIONS.....63

APPENDIX I: EMPLOYER SURVEYS.....65

EXECUTIVE SUMMARY

With more than 18 million workers employed in the sector, Health Care is one of the largest and fastest growing sectors of the United States economy.¹ In the San Diego and Imperial Counties specifically, Health Care employment withstood the Great Recession (2007–2009), sustaining and growing jobs while all other sectors faced employment decline. Overall, it contributes significantly to regional employment with an estimated one in 10 jobs in San Diego related to health services.²

In 2013, the Health Care workforce was made up of over 100,000 workers in San Diego County and 1,500 workers in Imperial County—numbers expected to grow by 13 percent and 25 percent, respectively, over the next five years.

This report documents growing opportunities in the region's Health Care sector and recommends specific actions for the workforce development system. For the purpose of this study, 12 occupations were selected for closer analysis of job gaps, in-demand skills, and training priorities:

- Registered nurses
- Licensed vocational nurses
- Nursing assistants
- Medical assistants
- Home health aides
- Medical coders
- Medical laboratory technicians
- Health care social workers
- Clinical laboratory scientists
- Respiratory therapists
- Physician assistants
- Occupational therapy assistants

In total, there are 60,137 workers employed in these 12 occupations in San Diego County with a projected growth of 12 percent over the next five years. In Imperial County, there are 2,643 workers employed in these occupations with a projected growth of 16 percent over the same period.³

The report gives an overview of the Health Care industry sector in both San Diego and Imperial Counties, and provides an occupational analysis of the 12 occupations selected for the study. The analysis includes a look at the supply and demand of workers in the regions, and training gaps identified through two surveys of Health Care institutions.

Overall, the number of program graduates exceeds the number of available positions in San Diego County. However, some occupations are projected to be in undersupply (e.g., home health aides, certified nursing assistants). Imperial County has a small overall undersupply, indicating a generally-balanced market. However, the employer survey data indicates that demand for all occupations (especially primary care occupations like registered nurses) might be underestimated.

The study recommends conducting additional research on demand and registered nurses data, enhancing capacity of programs focusing on occupations with projected shortages, reviewing existing programs for skills mismatch, investing in lab upgrades and faculty externships, ensuring training for in-demand soft skills such as computer and job readiness skills, increasing the number of externships between students and incumbents, providing clinical work experience across all occupations, and collaborating on regional Health Care pathways.

¹ Centers for Disease Control and Prevention. Website accessed on Feb. 26, 2014, cdc.gov/niosh/topics/healthcare.

² San Diego Regional Economic Development Corporation. Website accessed on May 17, 2014, sandiegobusiness.org/industry/healthcare.

³ Economic Modeling Specialists, International (EMSI) Analyst. May 2014.

INTRODUCTION

Health Care is one of the largest and fastest-growing sectors of the U.S. economy. More than 18 million workers are employed in this sector.⁴ Advances in technology and changing demographics are the driving forces impacting both the supply and demand for workers in this sector.

Expanding at a rapid pace, Health Care has been designated as one of California's high growth sectors.⁵ It contributes significantly to employment in the state with approximately two million workers employed in the sector, which accounts for one in every eight jobs.

San Diego County Health Care employers provide jobs to more than 100,000 workers and anticipate adding 12 percent more jobs over the next five years. Imperial County Health Care employers employ more than 1,500 workers and anticipate a 25 percent growth over the same time period.

Health Care is one of the largest and fastest-growing sectors of the U.S. economy. More than 18 million workers are employed in this sector.

Due to the expected rapid expansion in Health Care in both San Diego and Imperial Counties, the ability to provide a pool of trained and educated professionals and entry-level workers with the requisite knowledge and skill sets that employers need is critical. Ensuring that citizens have access to quality Health Care services is vital for attracting businesses and workers to live and work in the region.

San Diego County is ranked among the nation's best in providing the most sophisticated and innovative Health Care services. In 2012, Sharp Health Care, Rady Children's Hospital-San Diego and UC San Diego Health System each received recognition as one of 215 hospitals in the U.S. designated as "Health Care's Most Wired" institutions, an industry benchmark "designed to measure the level of IT adoption in U.S. hospitals and health systems."⁶

Health Care has also stimulated investment in infrastructure in the region. There are four Health Care facility construction projects underway in San Diego that account for nearly \$1.5 billion in contracts and have provided 14,000 on-site jobs for area workers.⁷

This report provides an overview of the Health Care sector in San Diego and Imperial Counties, including forces that impact the sector, and a detailed look at 12 occupations within Health Care. The report utilizes both traditional labor market data as well as region-specific findings from two employer surveys conducted on a statewide level—the survey of hospitals conducted by California Hospital Association ("CHA Survey") and the survey of non-hospital Health Care employers conducted by the California Community Colleges Health Workforce Initiative and the Centers of Excellence for Labor Market Research ("HWI/COE Survey").⁸ A total of 16 regional hospitals participated in the CHA survey and 187 Health Care employers responded to the HWI/COE survey. The results of two surveys were analyzed and are presented throughout this report to give a better understanding of job growth, skills in demand and hiring challenges among the regions' Health Care firms.⁹ The report also provides an overview of the educational institutions that prepare workforce for the 12 occupations of study and analyzes potential training gaps in both counties. For more information on the methodology, see Appendix D.

⁴ Centers for Disease Control and Prevention .Website accessed on February 26, 2014, cdc.gov/niosh/topics/healthcare.

⁵ Health Workforce Initiative, *Doing What Matters for Business and Industry* (2013), p.3.

⁶ San Diego Regional Economic Development Corporation. Website accessed on May 17, 2014, sandiegobusiness.org/industry/healthcare; "Health Care's Most Wired." Website accessed on Aug. 5, 2014, hnnmostwired.com.

⁷ San Diego Regional Economic Development Corporation. Website accessed on May 17, 2014, sandiegobusiness.org/industry/healthcare.

⁸ See Appendix D for the survey and study methodologies.

⁹ See Appendix I for the survey questionnaire and topline results.

This report is a product of the regional collaboration between the San Diego Workforce Partnership (SDWP), the San Diego and Imperial Counties Community Colleges Association (SDICCCA), and the Regional Center of Excellence for Labor Market Research (COE). Health Care was chosen for in-depth research as one of the five priority sectors that SDWP and the regional community colleges share. SDWP commissioned this report, while Probe Research, Inc. analyzed survey data, collected education institution information and prepared drafts of this report.

INDUSTRY TRENDS

Health Care employment in the San Diego and Imperial Counties sustained and slightly grew during the Great Recession, but external forces have transformed the industry sector in recent years. Shifting demographics, policy and licensure changes, and advances in technology are some of the key driving forces affecting the supply and demand for Health Care workers. Modes of Health Care service delivery are also evolving as today's aging and informed consumers access Health Care services. Self-monitoring by patients and remote servicing are becoming increasingly commonplace, and many are choosing home-based over institutionalized Health Care options. New skill sets and competencies will be required by workers to meet the evolving needs of patients and caregivers.

Policy and Regulations

Affordable Care Act: The Patient Protection and Affordable Care Act (ACA) was enacted in 2010 and its incentives for Accountable Care Organizations encourage health institutions to realign duties among different occupations to promote the most effective use of human resources.¹⁰ Due to its recent implementation, training providers and employers are uncertain about how exactly ACA will impact labor market needs and the overall delivery of Health Care services in the region.

New coder classification system: The U.S. is expected to begin using the ICD-10-CM¹¹ standard for statistically classifying diseases and other medical problems effective Oct. 1, 2015. Repeated delays in ICD-10-CM implementation and movement toward electronic health records (EHR) have created uncertainty among employers for expanded record-keeping services.

Health and wellness: Health and wellness are increasingly promoted throughout organizations in the region.¹² Health Care providers encourage their patients to maintain a healthy lifestyle, and many workplaces are recognizing the benefits of promoting healthy work environments for enhancing employee retention, improving productivity and increasing employee satisfaction. Greater focus on disease prevention is also a high-priority area in the Health Care industry.

Technological Innovations

¹⁰ Projecting the Supply and Demand for Primary Care Practitioners Through 2020 in Brief- November 2013," U.S. Department of Health and Human Services, Health Resources and Service Administration. Accessed on June 26, 2014, bhw.hrsa.gov/healthworkforce/supplydemand/usworkforce/primarycare/primarycarebrief.pdf.

¹¹ The ICD-10-CM (International Classification of Diseases, Revision 10, Clinical Modification) and the ICD-10-PCS are medical coding classifications that will replace the ICD-9-CM medical coding system and will be used for diagnostic and procedural coding. While the H.R. 4302 Act (also referred to as the "Protecting Access to Medicare Act of 2014") was enacted on April 2, 2014, the launch date for the program has not yet been set. For more information on ICD-10-CM implementation, visit icd10data.com.

¹² See "The new Health Care workforce: Looking around the corner to future talent management" (2012), prepared by Deloitte, accessed on June 26, 2014, deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Health%20Reform%20Issues%20Briefs/us_chs_NewHealthCareWorkforce_032012.pdf.

The extensive use of health information technology and technological advances in Health Care demand a certain degree of computer literacy among workers. Innovations in technology have increased treatment options for patients by making it possible for them to self-monitor their conditions. New technologies can also save consumers time and money by enabling them to report their conditions remotely via telephone or computer rather than driving to a clinic or hospital to see a physician. As such, technological advances are impacting the composition and skill requirements of the workforce. Employers and other industry experts recommend that workforce training institutions incorporate the use of information technologies to help consumers and clinicians better understand treatment options and relate decisions to outcomes and costs.¹³

Remote and self-monitoring systems: Technological innovations have made it easier for patients to monitor and report on their medical conditions remotely and to self-monitor their conditions. This will increase the demand for clinicians that can monitor patients and provide health advice over the telephone or electronically. New technology for distance medicine, self-care, bio-monitoring and e-visits that reduce demand for in-person visits to physicians, allied health clinics and other ambulatory facilities is also expected to impact the types of skills and competencies expected of Health Care workers.¹⁴

Technological advances in Health Care are impacting the composition and skill requirements of the workforce.

Changes in Service Delivery

Patient-centered care: While hospitals have traditionally focused on in-patient acute services, there is a growing demand for the Patient Centered Medical Home (PCMH) model. This new PCMH model ties reimbursement more closely to clinical measures than in the past and has transformed the way primary care is organized and delivered.¹⁵ PCMH requires close contact between patients and clinicians for continuous care, extensive use of electronic health records, and active participation between patients and their families for care and treatment.¹⁶ Equipping Health Care workers with skills and competencies to provide education and the ability to communicate care plans with patients and their families will become increasingly important.

Demand will increase for specific skill sets focused on outpatient services and customer-centered care, including customer service, communication services, scheduling and organizational skills. A retail or competitive business approach to providing these outpatient services will likely become increasingly apparent, as service providers compete to provide customers with a variety of medical services in the privacy of their own homes.

Team-based patient care: A team-based approach to patient care may include several different health professionals, such as physicians, advance practice nurses, nurses, physician assistants, health social workers, nutritionists, pharmacists, educators and care coordinators, who work collaboratively with patients on their health programs. While this new team-based service delivery

¹³ "The Complexities of National Health Care Workforce Planning: A review of current data and methodologies and recommendations for future studies," Bipartisan Policy Center, accessed on June 26, 2014, bipartisanpolicy.org.

¹⁴ "The new Health Care workforce: Looking around the corner to future talent management." (2012). Deloitte. Accessed on June 26, 2014, deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Health%20Reform%20Issues%20Briefs/us_chs_NewHealthCareWorkforce_032012.pdf.

¹⁵ "The new Health Care workforce: Looking around the corner to future talent management" (2012). Deloitte. Accessed on June 26, 2014, deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Health%20Reform%20Issues%20Briefs/us_chs_NewHealthCareWorkforce_032012.pdf.

¹⁶ "Patient-Centered Medical Homes." Health Affairs. September 14, 2010.

model may impact the demand and supply of Health Care workers,¹⁷ there is uncertainty regarding the preparedness of workers to lead teams of medical professionals.¹⁸

Patient advocacy: Providing case management services that include patient advocacy services, patient/family education and care management is becoming more commonplace. As a result, a new “Patient Advocate” or “Patient Navigator” occupation has been created to meet these needs.

Growing Consumerism

Consumers are seeking more value for their Health Care services, including quality-driven service that emphasizes customer engagement and relationship building. Value-based purchasing and bundling of services is an inevitable outcome of this new model of service delivery.¹⁹

INDUSTRY OVERVIEW

The Health Care sector combines medical technology and the human touch to diagnose, treat and administer care to the general population. It is typically comprised of the following three subsectors:

- **Ambulatory Health Care Services** provide direct and indirect health care services to ambulatory patients.
- **Hospitals** provide medical, diagnostic and treatment services to inpatients and some outpatient services.
- **Nursing and Long-Term Care** facilities provide residential care, combined with either nursing, supervisory or other types of care as needed.

Economic Impact and Employment Trends

Despite the challenges of the Great Recession, the Health Care sector has a significant impact on both San Diego and Imperial Counties’ economies. Health Care employment rose from 8.7 percent of the total U.S. civilian workforce in 1998 to 10.5 percent in 2008, and is projected to increase to 11.9 percent (19.8 million jobs) by 2018.²⁰

Within San Diego County, approximately 6,500 establishments employ over 100,000 people in Health Care, providing more than \$5.7 billion in wages annually. The Health Care sector contributes more than \$9.3 billion to the Gross Regional Product (GRP), and grew faster than every other sector in San Diego except Education Services through the years of the Great Recession.²¹ In fact, through the Great Recession (2007–2010), employment expanded by more than 12,000 jobs, or a 14-percent growth, while overall employment in the County fell by 6 percent.

¹⁷ See “The new Health Care workforce: Looking around the corner to future talent management” (2012), prepared by Deloitte, accessed on June 26, 2014, deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Health%20Reform%20Issues%20Briefs/us_chs_NewHealthCareWorkforce_032012.pdf.

¹⁸ “The Nursing Workforce in an Era of Health Care Reform,” by David I. Auerbach, Ph.D., Douglas O. Staiger, Ph.D., Ulrike Muench, R.N., Ph.D., and Peter I. Buerhaus, R.N., Ph.D., *New England Journal of Medicine* 2013; 368:1470-1472, accessed on June 25, 2014, nejm.org/doi/full/10.1056/NEJMp1301694.

¹⁹ “The new Health Care workforce: Looking around the corner to future talent management” (2012), prepared by Deloitte, accessed on June 26, 2014, deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Health%20Reform%20Issues%20Briefs/us_chs_NewHealthCareWorkforce_032012.pdf.

²⁰ “The new Health Care workforce: Looking around the corner to future talent management” (2012), prepared by Deloitte, accessed on June 26, 2014, deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Health%20Reform%20Issues%20Briefs/us_chs_NewHealthCareWorkforce_032012.pdf.

²¹ sandiegobusiness.org/sites/default/files/Industry_Healthcare.pdf.

Imperial County contains about 200 establishments that employ over 1,500 workers in Health Care. Jobs in Health Care grew by 15 percent (about 300 jobs) from 2007 to 2010, far outweighing the job growth across all industries in Imperial County during the years of the Great Recession, which was 2 percent.

Staffing Profile of Firms

The CHA survey collected responses from 16 hospitals in San Diego and Imperial Counties, capturing the largest hospital systems in the region. Table 1 shows a breakdown of the staffing levels at those institutions.²²

Table 1: Hospital Profile by Type of Worker

Employee Category	Number	% of Total
Full-time employees	28,960	72%
Part-time employees	5,639	14%
Per-diem workers	5,564	14%
Total	40,163	100%

The HWI/COE survey collected responses from 187 non-hospital Health Care employers (e.g., ambulatory care and long-term care institutions). A total of 8,578 workers were employed at these 187 firms, with 45 percent of them employing fewer than 10 employees. Only 14 percent of employers reported staffing levels at 100 employees or more (Table 2).²³

Table 2: Size of Ambulatory Care and Long-Term Care Employers

Size of the Organization	% of Total
1 to 4 employees	23%
5 to 9 employees	22%
10 to 24 employees	18%
25 to 49 employees	17%
50 to 99 employees	7%
100 or more employees	14%

OCCUPATIONAL OVERVIEW

For this study, 12 occupations were selected from the Health Care sector for in-depth analysis:

- Registered nurses
- Licensed vocational nurses
- Nursing assistants
- Medical assistants
- Home health aides
- Medical coders
- Medical laboratory technicians
- Health care social workers
- Clinical laboratory scientists
- Respiratory therapists
- Physician assistants
- Occupational therapy assistants

These occupations were selected based on the following considerations: high levels of employment statewide, short-term training or technical education requirements, high numbers of existing community college programs, and in-demand or successful “career pathways.” Occupational definitions are provided in Appendix C.

²² Source: CHA survey, 2013. n=16. “n” indicates the number of survey respondents.

²³ Source: COE/HWI survey, 2014. n=187

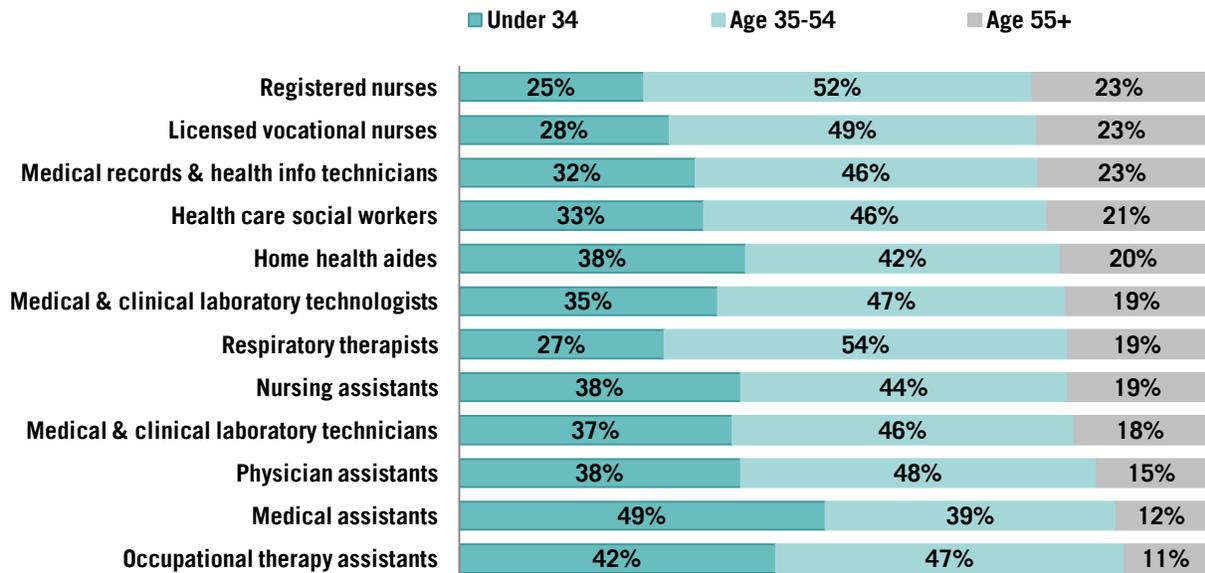
The study finds that these occupations represent a significant portion of the overall Health Care workforce in the region. Roughly one-half of the full-time workers at hospitals participating in the CHA Survey (48 percent) were employed in the 12 occupations studied, while nearly two-thirds of part-time workers (62 percent) and 43 percent of all per diem staff were represented by these occupations.

The following sections include an analysis of the demographic composition of the workforce, current and projected employment levels, employer difficulty in hiring, as well as skills and education requirements. The analysis is based on data collected from Economic Modeling Specialists International (EMSI), Burning Glass, the HWI/COE Survey²⁴ and the CHA Survey. See Appendix D for methodology.

Workforce Demographics

The growing demand for Health Care services remains strong with an expanding proportion of citizens entering retirement age. The 12 occupations studied indicate that the workforce is made up of workers at opposite ends of the age spectrum – those nearing retirement age and those starting their careers. Figures 1 and 2 show the proportion of age groups by occupation in the San Diego and Imperial Counties.²⁵

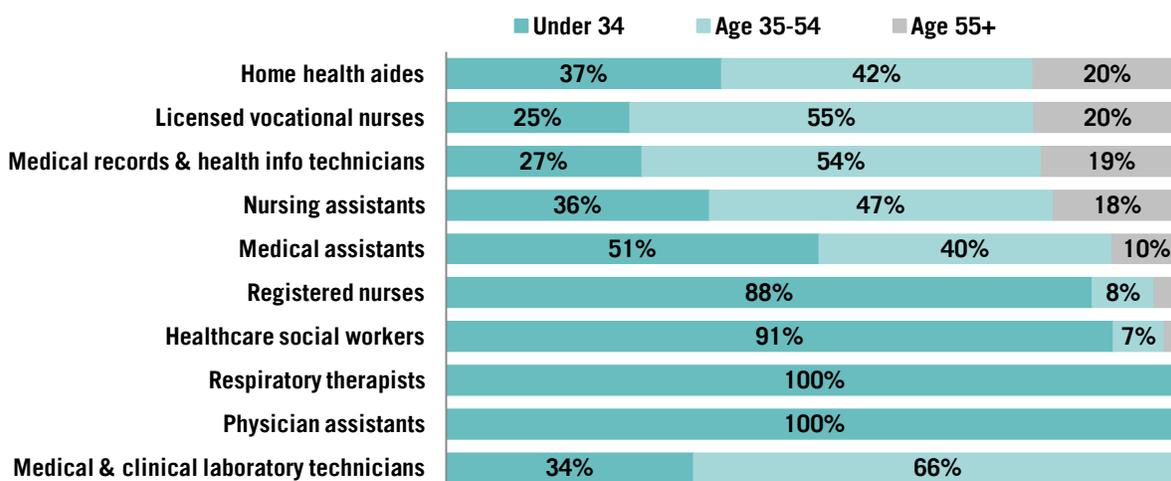
Figure 1: San Diego County Occupational Workforce by Age Group



²⁴ The HWI/COE survey was a survey of non-hospital Health Care employers.

²⁵ Source: EMSI. Quarterly Census of Wages and Employment (QCEW), non-QCEW, and employment data. May 2014.

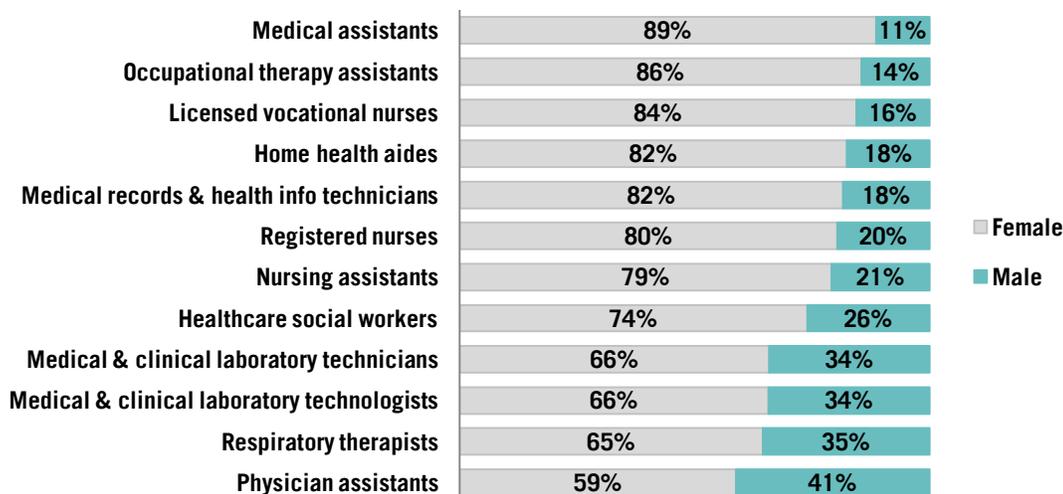
Figure 2: Imperial County Occupational Workforce by Age Group



Overall, about one-third of the San Diego Health Care workforce in these 12 occupations are under 35 years of age, about one-half are between ages 35-54, and one-fifth are 55 or older. With this portion of the workforce nearing retirement age in San Diego, older workers need to pass down experiential knowledge to younger workers to ensure continuity of care. The age makeup of the Imperial County Health Care workforce is quite different: 80 percent of the workforce are under 35 years of age, 14 percent are between ages 35 and 54, and only 6 percent are 55 or older. Thus, the aging workforce is not as much of a challenge in Imperial County as it is in San Diego County.

An examination of 12 Health Care occupations in the U.S. also reveals a female-dominated workforce.²⁶ For these 12 occupations, San Diego County’s workforce is 81 percent female and Imperial County’s workforce is 76 percent female (Figures 3 and 4).²⁷

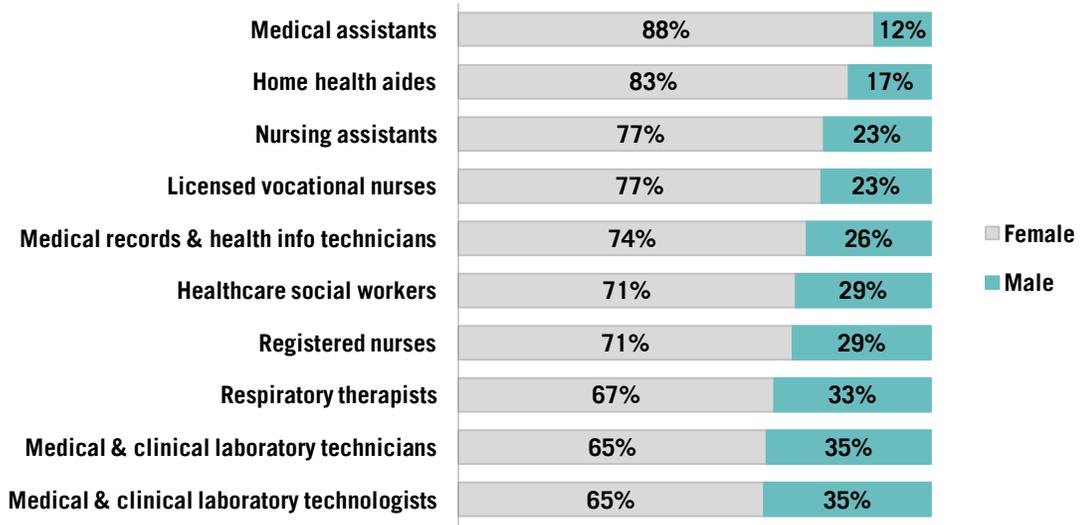
Figure 3: San Diego County Occupational Workforce by Gender



²⁶ U.S. Department of Health and Human Services, National Center for Workforce Analysis, The U.S. Health Workforce Chartbook (2013), pp. 6-27.

²⁷ EMSI. QCEW, non-QCEW, and employment data. May 2014.

Figure 4: Imperial County Occupational Workforce by Gender



Current and Projected Occupational Employment

In total, there are 60,137 workers employed in the 12 occupations in San Diego County, and 2,643 workers employed in these occupations in Imperial County.²⁸ Registered nurse is the largest Health Care occupation in both counties, accounting for more than 22,000 current jobs in San Diego and over 1,000 in Imperial. Other occupations with significant current employment include nursing assistants, medical assistants, home health aides and licensed vocational nurses (Figure 5).²⁹

Figure 5a: Current and Projected Employment in San Diego County

²⁸ Source: EMSI. Quarterly Census of Wages and Employment (QCEW), non-QCEW, and self-employment data. May 2014.

²⁹ Source: EMSI. QCEW, non-QCEW, and self-employment data. May 2014.

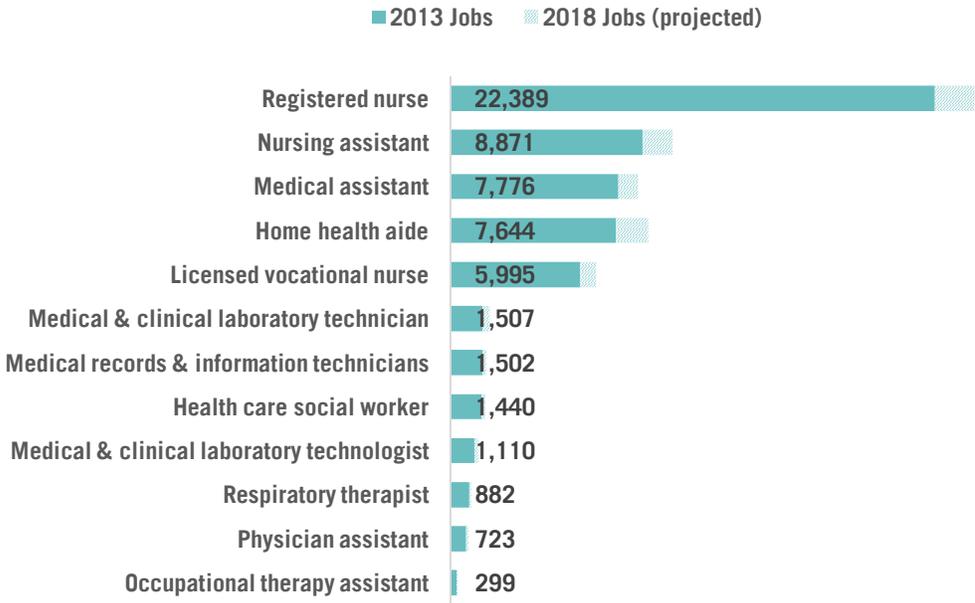
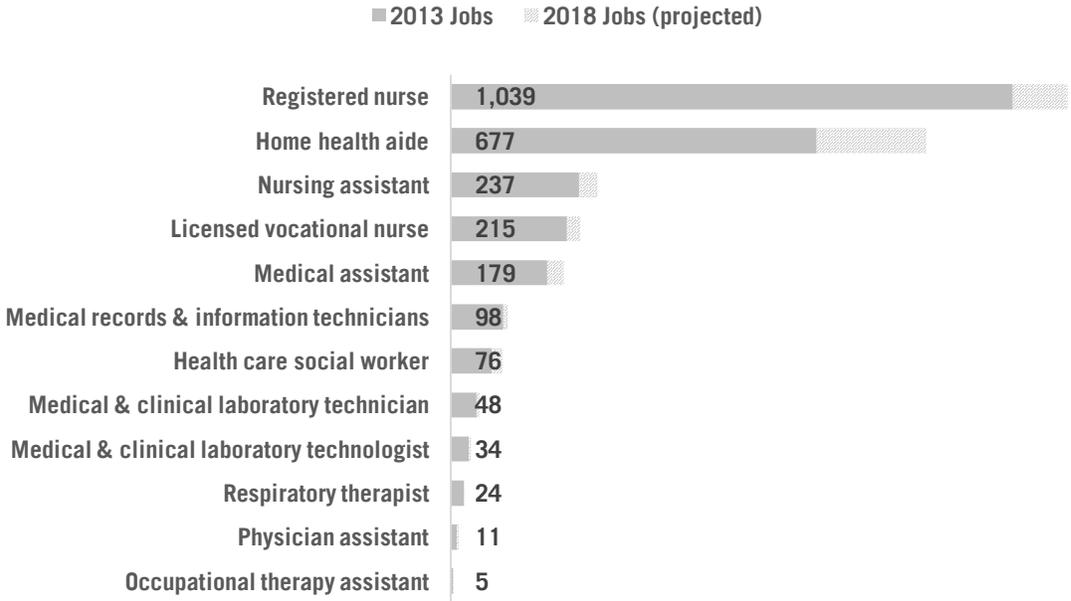


Figure 5b: Current and Projected Employment in Imperial County



According to the U.S. Department of Health and Human Services, Health Resources and Service Administration, demand for primary care services will continue to increase primarily due to the aging and

expanding population, but also due to the expanded insurance coverage of the ACA,³⁰ the growing prevalence of chronic disease, and the cost burden of chronic disease and co-morbidities.³¹

The regional employment outlook for the 12 occupations studied is bright, as average job growth is expected to be double for both the nation and state for all occupations. These occupations are expected to add employment by 12 percent (7,466 jobs) in San Diego County and 16 percent (435 jobs) in Imperial County between 2013 and 2018.³² Table 3 shows the projected number of workers needed for the occupations in the San Diego and Imperial Counties from 2013 to 2018. Annual openings include both new jobs due to industry expansion and replacement jobs.³³

Table 3: Current and Projected Employment by Occupation

Occupations	San Diego County				Imperial County			
	2013 Jobs	2018 Jobs	5-Year Change	Annual Openings	2013 Jobs	2018 Jobs	5-Year Change	Annual Openings
Registered nurses	22,389	24,197	1,808	822	1,039	1,140	101	42
Nursing assistants	8,871	10,250	1,379	460	237	272	35	12
Medical assistants	7,776	8,660	884	340	179	209	30	10
Home health aides	7,644	9,157	1,513	470	677	879	202	56
Licensed vocational nurses	5,995	6,743	748	308	215	240	25	11
Medical & clinical laboratory technicians	1,507	1,830	323	109	48	54	6	2
Medical records & information technicians	1,502	1,681	179	78	98	106	8	4
Health care social workers	1,440	1,608	168	66	76	96	20	2
Medical & clinical laboratory technologists	1,110	1,302	192	70	34	37	3	--
Respiratory therapists	882	958	76	29	24	26	2	--
Physician assistants	723	861	138	43	11	15	4	--
Occupational therapy assistants	299	355	56	20	5	6	1	--
Total	60,137	67,603	7,466	2,815	2,643	3,078	435	146

The total number of registered nursing positions in San Diego is expected to increase by 8 percent from 2013 to 2018 with more than 800 annual openings over the next five years. Imperial County is expected to increase the number of registered nurses by almost 10 percent during the same five-year period with about 40 annual openings. Overall, San Diego County will have just over 2,800 job openings per year, and Imperial County will see approximately 150 job openings per year over the next five years.

³⁰ "Projecting the Supply and Demand for Primary Care Practitioners Through 2020 in Brief- November 2013," U.S. Department of Health and Human Services, Health Resources and Service Administration, accessed on June 26, 2014, bhwh.hrsa.gov/healthworkforce/supplydemand/usworkforce/primarycare/primarycarebrief.pdf.

³¹ Bipartisan Policy Center, "The Complexities of National Health Care Workforce Planning: A review of current data and methodologies and recommendations for future studies," accessed on June 26, 2014, bipartisanpolicy.org/library/complexities-national-health-care-workforce-planning/.

³² Source: EMSI. QCEW, non-QCEW, and self-employment data. May 2014.

³³ Source: EMSI. QCEW, non-QCEW, and self-employment data. May 2014.

Employment Status: Ambulatory Care and Long-Term Care

According to the HWI/COE survey data, non-hospital Health Care institutions employing the occupations studied indicated that 85 percent of Health Care workers are company-hired employees while 15 percent are either contractors or temporary employees.

Respondents that employ any of the 12 occupations almost exclusively hire these workers as permanent staff. Compared to the other 11 occupations, occupational therapy assistants are the most likely to be contractor or agency employees (28 percent). Table 4 shows a breakdown of how Health Care workers are typically hired in both San Diego and Imperial Counties.³⁴

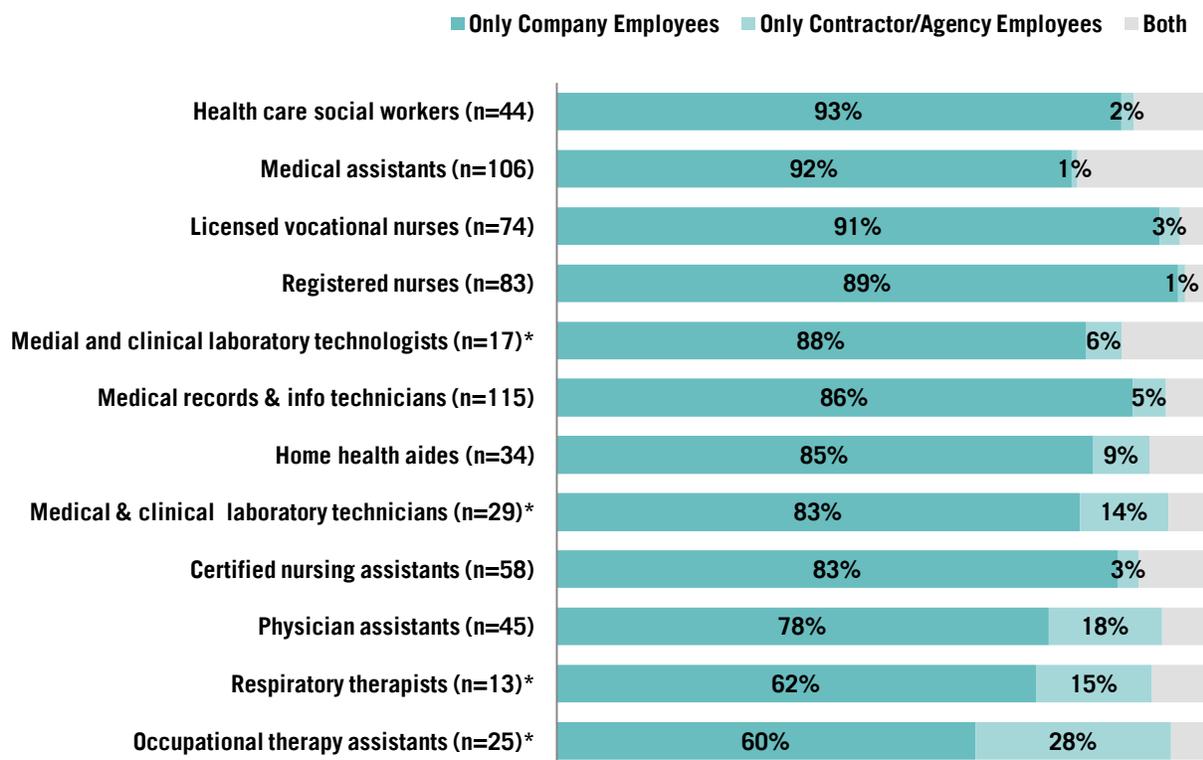
Table 4: In-House Versus Contractor/Agency Employment for Non-Hospital Employers

Occupations	Only Company Employees	Only Contractor/Agency Employees	Both Company and Contractor/Agency Employees
Health care social workers (n=44) ³⁵	93%	2%	5%
Medical assistants (n=106)	92%	1%	7%
Licensed vocational nurses (n=74)	91%	3%	7%
Registered nurses (n=83)	89%	1%	10%
Clinical laboratory scientists (n=17)	88%	6%	6%
Coders (n=115)	86%	5%	9%
Home health aides (n=34)	85%	9%	6%
Certified nursing assistants (n=58)	83%	3%	14%
Medical laboratory technicians (n=29)*	83%	14%	3%
Physician assistants (n=45)	78%	18%	4%
Respiratory therapists (n=13)*	62%	15%	23%
Occupational therapy assistants (n=25)*	60%	28%	12%

³⁴ HWI/COE Health Care Survey, 2014. *Dataset contains small bases and should be used as reference only.

³⁵ "n" indicates the number of survey respondents.

Figure XX: In-House Versus Contractor/Agency Employment for Non-Hospital Employers



Employment Status: Hospitals

Based on CHA survey data, hospitals hire coders almost exclusively as full-time employees (90 percent) while close to one-half of home health aides are hired on a per diem basis (48 percent) by hospitals in the San Diego and Imperial Counties. As indicated in Table 5, part-time employment is most evident among one-quarter of medical assistants (25 percent), occupational therapy assistants (24 percent) and respiratory therapists (23 percent).³⁶

Table 5: Full-Time Versus Part-Time and Per Diem Employment for Hospitals

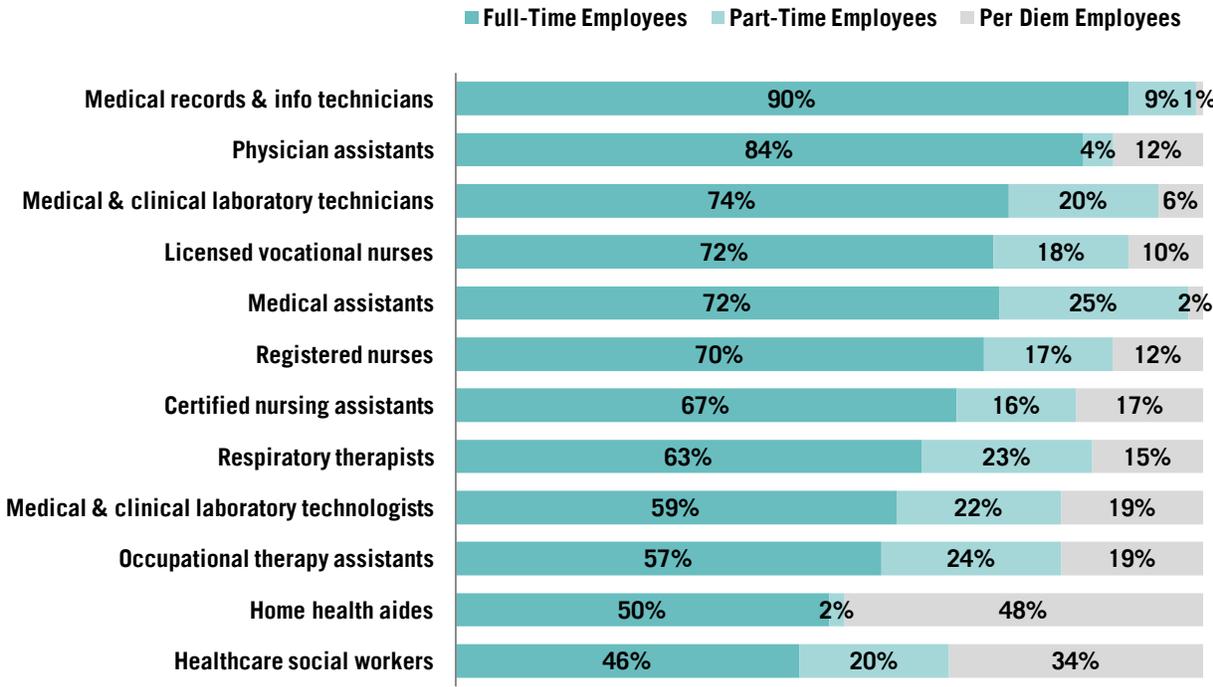
Occupations	Full-Time Employees	Part-Time Employees	Per Diem Employees
Medical coders	90%	9%	1%
Physician assistants	84%	4%	12%
Medical assistants	72%	25%	2%
Medical laboratory technicians	74%	20%	6%
Licensed vocational nurses	72%	18%	10%
Registered nurses	70%	17%	12%
Certified nursing assistants	67%	16%	17%
Respiratory therapists	63%	23%	15%

³⁶ Source: CHA Survey, 2014, n=16. *Dataset contains small bases and should be used as reference only.



Clinical laboratory scientists	59%	22%	19%
Occupational therapy assistants	57%	24%	19%
Home health aides	50%	2%	48%
Health care social workers	46%	20%	34%

Full-Time versus Part-Time and Per Diem Employees for Hospitals

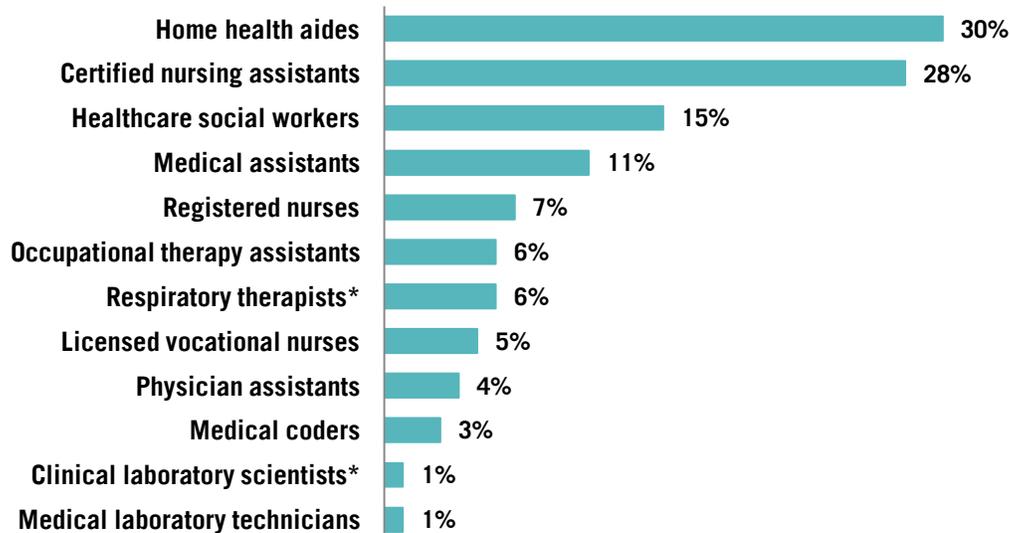


Employment Change: Ambulatory Care and Long-Term Care

The majority of ambulatory care and long-term care employers reported that they anticipate either retaining the same employment levels or hiring more workers across all occupations. Only between 7 and 9 percent of non-hospital Health Care employers anticipate reducing their staffing levels of licensed vocational nurses, physician assistants and registered nurses. On average, ambulatory care and long-term care employers are projected to increase employment across all occupations in the next 12 months, with home health aides and certified nursing assistants growing at the fastest rates—30 percent and 28 percent, respectively. Figure 6 depicts average 12-month growth rates by occupation for non-hospital employers in a combined two-county region.³⁷

Figure 6: Average 12-Month Job Growth Rates for Ambulatory Care & Long-Term Care

³⁷ Source: HWI/COE Survey, 2014. Dataset contains small bases and should be used as reference only.



Employment Change: Hospitals

The CHA survey explored the number of voluntary and involuntary separations at hospitals and the number of job openings from Oct. 1 to Dec. 31, 2013. Table 6 demonstrates the change in the number of positions for each occupation during this quarter.³⁸

**Table 6: Job Openings and Separations at San Diego and Imperial County Hospitals
Oct. 1-Dec. 31, 2013**

Occupations	Job Openings	Total Separations (Voluntary and Involuntary)	Quarterly Change in Employment
Registered nurses	968	377	+591
Licensed vocational nurses	66	32	+34
Medical assistants	43	27	+16
Certified nursing assistants	38	70	-32
Clinical laboratory scientists	24	11	+13
Health care social workers	24	8	+16
Respiratory therapists	15	12	+3
Home health aides	9	31	-22
Medical laboratory technicians	7	11	-4
Medical coders	6	-	+6
Occupational therapy assistants	3	2	+1
Physician assistants	1	-	+1

³⁸ Source: CHA Health Care Survey 2014. Dataset contains small bases as should be used as reference only.

There was a net gain of 591 new registered nurse positions created at 16 hospitals in the San Diego and Imperial Counties during the last quarter of 2013. At the same time, the number of licensed vocational nurses employed at these institutions increased by 34 positions. Some occupations experienced a reduction in the number of workers including certified nursing assistants (-32), home health aides (-22) and medical laboratory technicians (-4).

Occupational Wages

The median wages for the 12 occupations in San Diego and Imperial Counties are presented in Figure 7.³⁹ Median hourly earnings in 2013 were \$23.78 per hour in Imperial County and \$27.45 in San Diego County. Entry-level Health Care workers in San Diego County earned more than their counterparts in Imperial County. In fact, the median wage for medical assistants was considerably lower in Imperial County than San Diego County (\$11.54/hour versus \$16.12/hour). Median hourly earnings for social workers and licensed vocational nurses were higher in Imperial County than in San Diego County. The highest paid occupation in San Diego County was physician assistant at \$46.88/hour.

Figure 7: Median Hourly Wages in San Diego and Imperial Counties



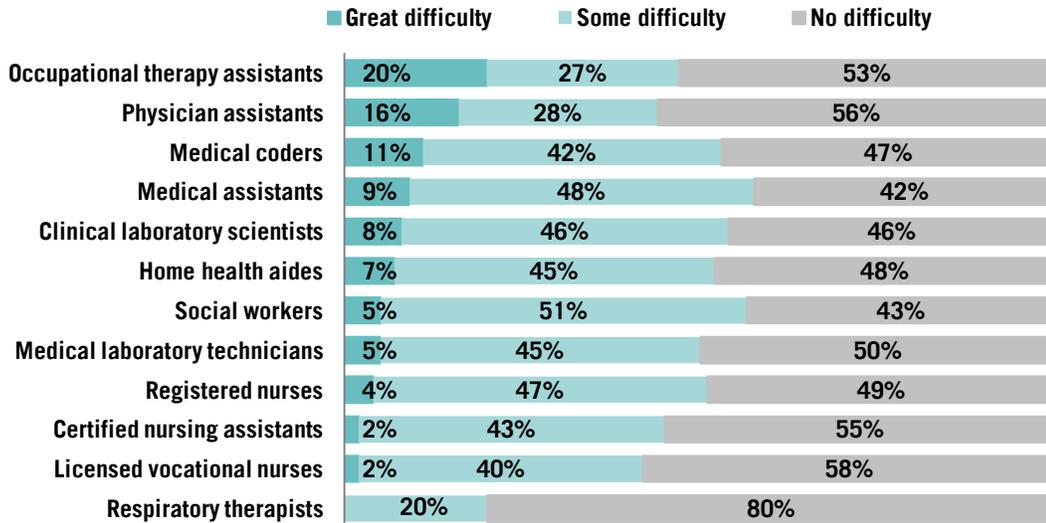
Difficulty Hiring: Ambulatory Care and Long-Term Care Employers

Fifty-seven percent of non-hospital institutions reported experiencing some difficulty (48 percent) or great difficulty (9 percent) in finding qualified entry-level applicants to fill vacant medical assistant positions

³⁹ Source: EMSI. QCEW, non-QCEW, and self-employment data. May 2014.

(Figure 8). A similar proportion of respondents experienced some or great difficulty finding qualified social workers (56 percent), clinical laboratory scientists (54 percent) and coders (53 percent).⁴⁰

Figure 8: Difficulty Hiring by Ambulatory Care & Long-Term Care Employers



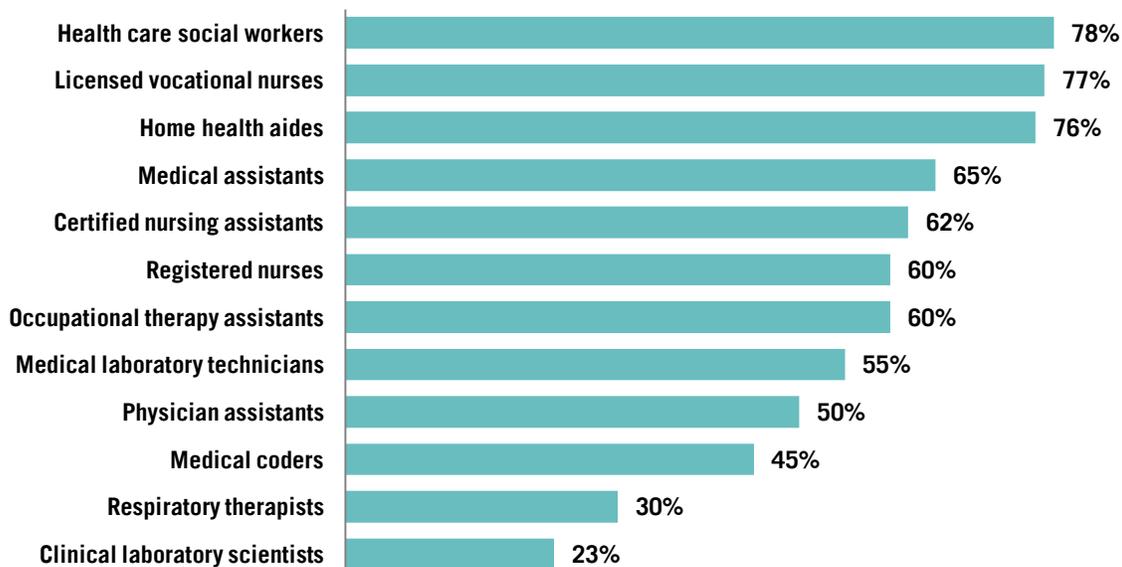
Professional Development Opportunities

Over three-quarters of health care social workers (78 percent) and licensed vocational nurses (77 percent) in ambulatory and long-term care facilities have access to professional development such as in-house or sponsored training. Conversely, less than one-quarter of clinical laboratory scientists (23 percent) have similar access to employer-funded professional development or training opportunities (Figure 9).⁴¹

Figure 9: Percent of Ambulatory Care and Long-Term Care Employers Providing Professional Development Opportunities

⁴⁰ Source: HWI/COE Survey, 2014.

⁴¹ Source: HWI/COE Survey, 2014.



Knowledge, Skills and Abilities

By analyzing online job postings, secondary literature and surveys, this study documents several knowledge, skills and abilities necessary for success in the Health Care sector among all 12 occupations studied:

1. **Team-based approach:** The ability to work well in a team, or to promote a team-based approach, such as “patient care coordination” skills for registered nurses and physician assistants.
2. **Clinical experience:** The need for clinical experience and training in the areas of IV therapy, pain management, patient assistance and several specialized areas (e.g. oncology, dementia/Alzheimer’s/memory loss) are identified as important skills.
3. **Customer-focused approach:** The increasing focus on providing customer service to patients, the knowledge of appropriate workplace behavior, and skills associated with patient interactions are identified as important.
4. **Computer skills:** Job candidates in all Health Care occupations are expected to have a working knowledge of computer usage, particularly since some jobs require data entry skills and specific program knowledge. This is evident through increases in in-home patient care, remote-servicing and self-monitoring.
5. **Record-keeping:** Skills such as maintaining medical records, billing systems, ICD-9-CM and ICD-10-CM coding standards, electronic health records and knowledge of Medicare and insurance-related topics are considered valuable skills in a Health Care workplace.
6. **Communication skills:** Employers often indicate that they need workers with good written and oral communication skills, specifically in English.
7. **Problem-solving and critical thinking:** Candidates who possess strong problem-solving skills and the ability to think critically are greater assets for employers.

8. **Leadership skills:** Employers seek job candidates with strong leadership, case management expertise, and medical-related administration experience or project management skills. A number of employers recruiting for licensed vocational nurses also identify the need for strong treatment planning and/or discharge planning skills.
9. **Quality control:** A significant number of employers look for workers who can control quality and have attention to detail in their work. This was ranked particularly high among job postings for those employers filling coder positions.
10. **Ability to instruct and educate:** Candidates capable of educating and instructing patients, family members and care-givers on health-related topics are preferred among Health Care employers.

REGIONAL EDUCATION AND TRAINING

The number of private academic institutions offering health-related education and training has proliferated in recent years across the country. Fewer than 20 private registered nursing education programs granted less than 1,000 degrees in 2002; however, the number of training providers grew to more than 200 programs granting more than 12,000 degrees by 2010.⁴²

In San Diego and Imperial Counties, there are 28 postsecondary institutions (public and private) that offer training programs for the 12 occupations of study. Most of these institutions are located in San Diego County, with only two in Imperial—Imperial Valley College and San Diego State University, Imperial Valley Campus. Postsecondary programs range from short-term certificate offerings to associate and bachelor’s degree programs.

To identify the supply of qualified workers for the 12 occupations studied in the region, data from the following sources were analyzed: Integrated Postsecondary Education Data System (IPEDS), California Community Colleges Chancellors’ Office (CCCCO) Data Mart, and SDWP’s Eligible Training Provider List (ETPL).

In total, San Diego County postsecondary institutions awarded more than 4,200 certificates and degrees in programs related to the 12 occupations in 2012-2013. One-third of all awards went to medical assistants and 30 percent to registered nurses (Table 7).⁴³

Imperial County postsecondary institutions awarded about 100 certificates and degrees, with the majority of students completing registered nursing and licensed vocational nursing programs (Table 8).⁴⁴

For a full list of the programs and completion data, see Appendices F & G.

Table 7: Number of Postsecondary Program Completers in San Diego County, 2012-2013

Occupation	Certificates	Associate Degrees	Bachelor's Degrees	Total Completions
Certified nursing assistants	212	0	0	212

⁴² “The Nursing Workforce in an Era of Health Care Reform,” by David I. Auerbach, Ph.D., Douglas O. Staiger, Ph.D., Ulrike Muench, R.N., Ph.D., and Peter I. Buerhaus, R.N., Ph.D., *New England Journal of Medicine* 2013, Volume 368, p.1471.

⁴³ Sources: CCCCCO Data Mart, IPEDS, and interviews with individual colleges. 2014. *Self-reported by college offering the program.

⁴⁴ Sources: CCCCCO Data Mart and IPEDS. 2014.

Clinical laboratory scientists	0	0	4	4
Health care social workers	1	29	0	30
Home health aides	195	0	0	195
Licensed vocational nurses	352	10	19	381
Medical & clinical laboratory technicians	22	20	0	42
Medical assistants	1,212	210	0	1,422
Medical coders	355	33	0	388
Occupational therapy assistants	0	19*	0	19
Physician assistants	0	0	0	0
Registered nurses	71	511	686	1,268
Respiratory therapists	32	212	19	263
Total	2,452	1,044	728	4,224

Table 8: Number of Postsecondary Program Completers in Imperial County, 2012-2013

Occupation	Certificates	Associate Degrees	Bachelor's Degrees	Total Completions
Health care social workers	1	7	0	8
Licensed vocational nurses	12	15	0	27
Medical assistants	11	0	0	11
Registered nurses	0	37	21	58
Total	24	59	21	104

Regional Occupational Programs (ROPs) also offer courses to train students for entry-level employment in Health Care occupations, such as medical assistants, nursing assistants and home health aides. These programs are available to students at four high school and adult school locations in San Diego County (Table 9).⁴⁵

Table 9: ROP Completers of Health Care Related Programs in San Diego County

Courses	School	2012-13 Completers
Home health aide	Las Villas del Norte Health Center	54
Medical assistant/admin	Escondido Adult School	15
Medical assistant/admin/clinical	Escondido Adult School	27
Medical assistant/clinical	Vista Adult School - Sunset Campus	93
Nurse assistant	Las Villas del Norte Health Center	91
Nurse assistant	Poway Adult School	102
Nurse assist/home health aide	Las Villas del Norte Health Center	30
	Total	412

⁴⁵ Source: San Diego County Office of Education. 2014.

Education and Training Challenges

The increasing number of Health Care training providers leads to higher levels of competition for the limited number of clinical openings available at Health Care facilities in San Diego and Imperial Counties. While need for a trained workforce increases, the limited number of facilities available for clinical experience acts as a bottleneck in the education of potential workers. Employers typically require applicants to have a minimum of one year of experience; however, a scarcity in the number of facilities where applicants can acquire prerequisite training makes it increasingly difficult for employers to find qualified workers.

TRAINING GAP ANALYSIS

A job gap is created when the number of qualified workers available does not meet the number of jobs that employers are trying to fill. Analyzing employer demand versus worker supply helps identify areas in which education and training providers can concentrate their investments and efforts.

The gap analysis contained in this section of the report assesses the projected supply and demand for each of the 12 occupations studied in both San Diego and Imperial Counties. The goal of the research was to determine if the level of supply for these key occupations is enough to meet the projected demand. Table 10 compares the number of annual graduates in each county to the number of projected annual openings (both new and replacement jobs).

Table 10: Demand Versus Supply Analysis in San Diego and Imperial Counties

Occupation	Average Annual Job Openings		Average Annual Graduates		Difference (Under/ Oversupply)	
	San Diego	Imperial	San Diego	Imperial	San Diego	Imperial
Certified nursing assistants	460	12	212	0	-248	-12
Home health aides	470	56	195	0	-275	-56
Medical & clinical laboratory technicians	109	2	42	0	-67	-2
Clinical laboratory scientists	70	0	4	0	-66	0
Physician assistants	43	0	0	0	-43	0
Health care social workers	66	2	30	8	-36	6
Occupational therapy assistants	20	0	19	0	-1	0
Licensed vocational nurses	308	11	381	27	73	16
Respiratory therapists	29	0	263	0	234	0
Medical coders	78	4	388	0	310	-4
Registered nurses	822	42	1,268	58	446	16
Medical assistants	340	10	1,422	11	1,082	1
Total	2,815	146	4,224	104	1,409	-35

Overall, the number of program graduates exceeds the number of available positions in San Diego County. Specifically, medical assistants, medical coders, registered nurses and respiratory therapists have an

oversupply. The oversupply of medical coders may be due to the new coding regulations (ICD-10-CM) implementation over the next year; therefore, coders need to be retrained in the new system. Occupations for which there is a significant annual undersupply of a trained workforce include home health aides, certified nursing assistants, medical lab technicians and clinical lab scientists.

Imperial County, on the other hand, has an overall undersupply for most programs. Reported oversupply of a trained workforce is very small, generally indicating a balanced market.

While the number of registered nurse graduates currently exceeds the projected number of available positions in both San Diego and Imperial Counties, literature suggests that the demand is expected to increase significantly in upcoming years as their roles are expanded and as an increasing number of nurses retire. This is confirmed by the CHA survey of 16 hospitals in the region that reported the overall current number of registered nurses that is significantly higher than the estimates provided by employment data from the EMSI or the U.S. Bureau of Labor Statistics (BLS).

It should also be noted that supply data (annual number of graduates) captures all completions including private technical schools, community colleges and universities; therefore, the supply of workers may be double-counted for students who get a certificate and later obtain an associate degree, or students who obtain an associate degree and then transfer to a four-year institution.

Opportunities exist for alleviating potential labor market shortfalls by providing training and education and promoting career development among the positions, which will have an anticipated undersupply. With the possibility of transferring knowledge and skills between fields, it is possible that some undersupply for one occupation can be filled by oversupply in another occupation with retraining.

CONCLUSIONS AND RECOMMENDATIONS

This study confirms that Health Care is a pivotal sector for both San Diego and Imperial Counties. As the only sector that sustained job growth, albeit slow, during the years of the Great Recession, it is a sector of opportunity, with numerous jobs requiring training and education.

Examination of the 12 occupations reveals that they comprise a significant portion of Health Care employment and are expected to grow in the next five years. Annual job openings across all 12 occupations will total more than 2,400 for San Diego County and 100 for Imperial County. However, these are conservative estimates that do not account for expansion of Health Care services and changing roles due to implementation of ACA and other policies. The surveys of hospitals and ambulatory care and long-term care establishments confirm that the demand for these occupations (especially those working in primary care settings) will be higher than projected by traditional labor market information sources.

The analysis of the occupational demand versus supply of trained workers (gap analysis) in San Diego County show that there are several occupations with significant shortages of trained workers. These include certified nursing assistants, home health aides, medical laboratory technicians, clinical laboratory scientists and physician assistants. While the number of registered nurse graduates currently exceeds the projected number of available openings in San Diego County, literature and survey findings suggest that the demand is expected to increase significantly in upcoming years.

Employer requirements for skills and knowledge of Health Care workers are transforming as well due to changing policies, economic growth and technology. Some areas of importance for employers include clinical

training, ability to work well in teams, a customer-focused approach, computer knowledge, quality control, critical thinking, record-keeping and communication skills.

It is important that the workforce development system in both counties address training and skills gaps for the 12 occupations of study. Over half of employers reported difficulty in hiring for occupations that seem to be in oversupply, such as medical assistants and registered nurses. This demonstrates the need for critical review of programs across educational institutions, especially for short-term training programs (e.g. medical assisting, nursing assisting).

The research reveals several potential areas of opportunity to better meet students' and employers' labor market needs and provides the following recommendations:

Additional Research Recommendations

1. In order to adequately assess the annual supply of registered nurses and the quality of individual programs, information about the annual number of graduates that pass National Council Licensure Examination (NCLEX-RN) by institution should be obtained and analyzed. This exam is a requirement for all registered nurses.
2. Employment data from both the HWI/COE and CHA surveys should be analyzed to estimate employment numbers and projections (where possible) to counter the traditional LMI (such as EMSI) estimates that do not currently include underlying industry trends.

Workforce Development and Education Recommendations

1. Education and training institutions in both counties should add or enhance completion rates of programs that are focused on preparing for occupations with regional supply shortages, including certified nursing assistants, home health aides, medical laboratory technicians, clinical laboratory scientists and physician assistants. Please note that annual openings for some of these occupations (such as physician assistants and clinical laboratory scientists) are small in absolute numbers. The need can be met by expanding the capacity of institutions currently offering programs in these areas rather than creating new programs.
2. Education and training institutions that currently train for registered nurses, medical assistants, medical coders and respiratory therapists are advised to review the programs to ensure that they meet the hiring requirements of employers. Because many employers report difficulties in hiring for some of these occupations, there may be a disconnect between what employers need and what education and training institutions provide. This mostly applies to programs tailored for occupations not requiring certifications.
3. Considering the rapidly-changing technology, the workforce development system should continue supporting Health Care programs by investing in laboratory equipment and software upgrades and enhancements. This allows the programs to stay current with industry trends and employer demands. Funding faculty externships can also be considered a workforce investment strategy to ensure that the curriculum is up-to-date.
4. As employers across the board report a shortage in soft skills, education and training providers and the workforce development system need to work together to address these shortfalls. Existing Health Care programs should ensure that the curriculum incorporates 1) soft skills, such as

teamwork, customer service, time management, written and oral communication (both English and Spanish), problem solving and critical thinking, and organization and time management; 2) basic computer skills, such as data entry and record keeping; and 3) job readiness skills, such as interviews and workplace readiness. In addition, education and training providers can design customized short-term training programs focusing on soft skills for incumbent Health Care workers.

5. With the support of regional workforce development agencies, employers and educators should work together to increase the number of externships between students and incumbents. Soon-to-retire Health Care workers have valuable experience that can be shared with new entrants into the field, especially among registered nurses.
6. Education and training institutions offering programs that do not explicitly require clinical experience as part of certification should still ensure that students receive relevant work experience across all occupations. Employers report that previous work experience is critical for graduates seeking employment in all 12 occupations of study. The ability to find suitable clinical or practicum placements for students is becoming increasingly challenging as a growing number of public and private institutions compete for limited spaces. This can be achieved through volunteer work, internships or other avenues of job experience. Possible options to consider include:
 - a. Offering residency programs in order to create more opportunities for entry-level and inexperienced workers to gain clinical work experience.
 - b. Including opportunities for clinical experience for a range of health care professionals. For example, the State University of New York (SUNY) incorporates a clinical component into its nine-week Home Health Aide Program or its 10-week Certified Nurse Aide Program.⁴⁶ Under these programs, the home health aide pursues a curriculum that includes a clinical internship that is supervised by a licensed nurse.
 - c. Encouraging students to gain experience by pursuing volunteer work in their field. A “post-residency” model is in place in Northern California whereby students re-enroll in their program area once they graduate in order to get work experience. Students would be required to outlay additional funds for tuition and would forego earnings for a year in order to pursue this work experience. In return, the schools provide insurance coverage for students while they gain their work experience in health care institutions.
 - d. Investing in and utilizing simulations such as the SimWARS competitions used by the North Shore-LIJ program in New York.⁴⁷ This program provides an opportunity for teams of students to compete in simulated patient scenarios and assesses their performance in areas such as teamwork, communications and clinical decision-making.
7. While the Health Care sector provides employment opportunities for workers across the educational attainment spectrum, the jobs that require postsecondary education (greater than a

⁴⁶ suny.edu.

⁴⁷ northshorelij.com/hospitals/about-us.

short-term certificate) provide better wages than entry-level jobs. Education institutions should continue working together to facilitate seamless pathways for students from high schools to community colleges and from community colleges to four-year institutions. Appendix B provides a look at career lattices that can be used for the purposes of regional pathways planning.

APPENDIX A: OCCUPATIONAL PROFILES

Sources: U.S. Bureau of Labor Statistics, Economic Modeling Specialists, International and O*NET OnLine.

Health Care Social Workers

Standard Occupational Code: 21-1022

Other Job Title(s): Clinical Social Worker, Medical Social Worker, Referral Coordinator

Description: Provide individuals, families, and groups with the psychosocial support needed to cope with chronic, acute, or terminal illnesses. Services include advising family caregivers, providing patient education and counseling and making referrals for other services. May also provide care and case management or interventions designed to promote health, prevent disease and address barriers to access to health care.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		1,440	76	
Projected Employment (2018)		1,608	96	
Growth Rate (2013-2018)		12%	26%	
Average Annual Openings (2013-2018)		66	6	
Hourly Pay Range (San Diego)		\$23.36 Entry-level	\$28.30 Median	\$34.61 Experienced
Typical Educational Attainment		Bachelor's degree		

Top Skills and Competencies

Technical	Non-Technical
Social Work	Planning
Mental Health Treatment	Communication
Therapy	Organization
Crises Intervention	Spanish
	File Management
	English

Occupational Tasks

- Advocate for clients or patients to resolve crises.
- Collaborate with other professionals to evaluate patients' medical or physical condition and to assess client needs.
- Refer patient, client, or family to community resources to assist in recovery from mental or physical illness and to provide access to services such as financial assistance, legal aid, housing, job placement or education.
- Counsel clients and patients in individual and group sessions to help them overcome dependencies, recover from illness, and adjust to life.
- Utilize consultation data and social work experience to plan and coordinate client or patient care and rehabilitation, following through to ensure service efficacy.

Physician Assistants

Standard Occupational Code: 29-1071

Other Job Title(s): Physician Assistant

Description: Provide health care services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment and counsel patients. May, in some cases, prescribe medication. Must graduate from an accredited educational program for physician assistants.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		723	11	
Projected Employment (2018)		861	15	
Growth Rate (2013-2018)		19%	36%	
Average Annual Openings (2013-2018)		43	---	
Hourly Pay Range (San Diego)		\$40.63 Entry-level	\$46.88 Median	\$55.07 Experienced
Typical Educational Attainment		Master's degree		

Top Skills and Competencies

Technical	Non-Technical
Patient Care	Organization
Physical Demand	Research
Surgery	Communication
Primary Care	Writing
Anesthesiology	Quality Assurance and Control

Occupational Tasks

- Examine patients to obtain information about their physical condition.
- Interpret diagnostic test results for deviations from normal.
- Obtain, compile and record patient medical data, including health history, progress notes and results of physical examination.
- Make tentative diagnoses and decisions about management and treatment of patients.
- Prescribe therapy or medication with physician approval.
- Administer or order diagnostic tests, such as x-ray, electrocardiogram and laboratory tests.
- Perform therapeutic procedures, such as injections, immunizations, suturing and wound care, and infection management.
- Instruct and counsel patients about prescribed therapeutic regimens, normal growth and development, family planning, emotional problems of daily living and health maintenance.
- Provide physicians with assistance during surgery or complicated medical procedures.
- Visit and observe patients on hospital rounds or house calls, updating charts, ordering therapy and reporting back to physician.

Respiratory Therapists

Standard Occupational Code: 29-1126

Other Job Title(s): Respiratory Therapist

Description: 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.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		882	24	
Projected Employment (2018)		958	26	
Growth Rate (2013-2018)		9%	8%	
Average Annual Openings (2013-2018)		29	---	
Hourly Pay Range (San Diego)		\$27.43 Entry-level	\$32.24 Median	\$37.48 Experienced
Typical Educational Attainment		Associate degree		

Top Skills and Competencies

Technical	Non-Technical
Respiratory Therapy	Organization
Critical Care	Troubleshooting
Therapy	Detail-oriented
Modalities	Communication
Advanced Cardiac Life Support (ACLS)	Typing
Neonatal Intensive Care Unit (NICU)	

Occupational Tasks

- Provide emergency care, such as artificial respiration, external cardiac massage or assistance with cardiopulmonary resuscitation.
- Monitor patient's physiological responses to therapy, such as vital signs, arterial blood gases or blood chemistry changes and consult with physician if adverse reactions occur.
- Set up and operate devices such as mechanical ventilators, therapeutic gas administration apparatus, environmental control systems, or aerosol generators, following specified parameters of treatment.
- Work as part of a team of physicians, nurses or other health care professionals to manage patient care by assisting with medical procedures or related duties.
- Maintain charts that contain patients' pertinent identification and therapy information.
- Read prescription, measure arterial blood gases and review patient information to assess patient condition.
- Relay blood analysis results to a physician.

Registered Nurses

Standard Occupational Code: 29-1141

Other Job Title(s): Registered Nurse

Description: 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.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		22,389	1,039	
Projected Employment (2018)		24,197	1,140	
Growth Rate (2013-2018)		8%	10%	
Average Annual Openings (2013-2018)		822	42	
Hourly Pay Range (San Diego)		\$34.68 Entry-level	\$41.63 Median	\$49.44 Experienced
Typical Educational Attainment		Associate degree		

Top Skills and Competencies

Technical	Non-Technical
Patient Care	Communication
Treatment Planning	Planning
Advanced Cardiac Life Support (ACLS)	English
Patient Direction	Leadership
	Organization

Occupational Tasks

- Maintain accurate, detailed reports and records.
- Administer medications to patients and monitor patients for reactions or side effects.
- Record patients' medical information and vital signs.
- Monitor, record and report symptoms or changes in patients' conditions.
- Consult and coordinate with health care team members to assess, plan, implement or evaluate patient care plans.
- Modify patient treatment plans as indicated by patients' responses and conditions.
- Monitor all aspects of patient care, including diet and physical activity.
- Direct or supervise less-skilled nursing or health care personnel or supervise a particular unit.
- Prepare patients for and assist with examinations or treatments.

Medical and Clinical Laboratory Technologists

Standard Occupational Code: 29-2011

Other Job Title(s): Clinical Laboratory Scientists, Medical Lab Technician, Clinical Lab Scientist, Clinical Research Associate, Medical Technologist, Histology Technician, Histotechnician, Cytotechnologist, Laboratory Technologist

Description: Perform complex medical laboratory tests for diagnosis, treatment and prevention of disease. May train or supervise staff.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		1,110	34	
Projected Employment (2018)		1,302	37	
Growth Rate (2013-2018)		17%	9%	
Average Annual Openings (2013-2018)		70	---	
Hourly Pay Range (San Diego)		\$27.74 Entry-level	\$35.47 Median	\$43.18 Experienced
Typical Educational Attainment		Bachelor's degree		

Top Skills and Competencies

Technical	Non-Technical
Clinical Research	Organization
GCP	Writing
Clinical Study/Trials	Communication
Chemistry	Research
Medical Terminology	Quality Assurance and Control

Occupational Tasks

- Conduct chemical analysis of body fluids, including blood, urine or spinal fluid, to determine presence of normal or abnormal components.
- Analyze laboratory findings to check the accuracy of the results.
- Operate, calibrate, or maintain equipment used in quantitative or qualitative analysis, such as spectrophotometers, calorimeters, flame photometers or computer-controlled analyzers.
- Collect and study blood samples to determine the number of cells, their morphology or their blood group, blood type or compatibility for transfusion purposes, using microscopic techniques.
- Enter data from analysis of medical tests or clinical results into computer for storage.
- Establish or monitor quality assurance programs or activities to ensure the accuracy of laboratory results.
- Analyze samples of biological material for chemical content or reaction.
- Set up, clean and maintain laboratory equipment.

Medical and Clinical Laboratory Technicians

Standard Occupational Code: 29-2012

Other Job Title(s): Medical Laboratory Technician, Lab Assistant, Lab Technician, Specimen Accessioner, Specimen Processor, Photo Laboratory Technician, Clinical Technician

Description: Perform complex medical laboratory tests for diagnosis, treatment and prevention of disease. May work under the supervision of a medical technologist.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		1,507	48	
Projected Employment (2018)		1,830	54	
Growth Rate (2013-2018)		21%	13%	
Average Annual Openings (2013-2018)		109	2	
Hourly Pay Range (San Diego)		\$16.57 Entry-level	\$20.32 Median	\$25.03 Experienced
Typical Educational Attainment		Associate degree		

Top Skills and Competencies

Technical	Non-Technical
Chemistry	Organization
Biology	Research
Laboratory Equipment	Communication
Phlebotomy	Writing
Experiments	Detail-oriented

Occupational Tasks

- Conduct chemical analyses of body fluids, such as blood or urine, using microscope or automatic analyzer to detect abnormalities or diseases and enter findings into computer.
- Conduct blood tests for transfusion purposes and perform blood counts.
- Examine cells stained with dye to locate abnormalities.
- Set up, maintain, calibrate, clean, and test sterility of medical laboratory equipment.
- Analyze the results of tests or experiments to ensure conformity to specifications, using special mechanical or electrical devices.
- Analyze and record test data to issue reports that use charts, graphs or narratives.
- Consult with a pathologist to determine a final diagnosis when abnormal cells are found.
- Prepare standard volumetric solutions or reagents to be combined with samples, following standardized formulas or experimental procedures.
- Inoculate fertilized eggs, broths or other bacteriological media with organisms.
- Collect blood or tissue samples from patients, observing principles of asepsis to obtain blood sample.

Licensed Practical and Licensed Vocational Nurses

Standard Occupational Code: 29-2061

Other Job Title(s): Licensed Vocational Nurse (LVN), Licensed Practical Nurse (LPN)

Description: 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.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		5,995	215	
Projected Employment (2018)		6,743	240	
Growth Rate (2013-2018)		12%	12%	
Average Annual Openings (2013-2018)		308	11	
Hourly Pay Range (San Diego)		\$20.42 Entry-level	\$23.38 Median	\$26.54 Experienced
Typical Educational Attainment		Postsecondary non-degree award (Certificate)		

Top Skills and Competencies

Technical	Non-Technical
Patient Care	English
Vital Signs Measurement	Spanish
Patient Direction	Communication
Acute Care	Writing
Treatment Planning	Organization

Occupational Tasks

- Administer prescribed medications or start intravenous fluids, noting times and amounts on patients' charts.
- Observe patients, charting and reporting changes in patients' conditions, such as adverse reactions to medication or treatment, and taking any necessary action.
- Answer patients' calls and determine how to assist them.
- Measure and record patients' vital signs, such as height, weight, temperature, blood pressure, pulse and respiration.
- Provide basic patient care or treatments, such as taking temperatures or blood pressures, dressing wounds, treating bedsores, giving enemas or douches, rubbing with alcohol, massaging or performing catheterizations.
- Work as part of a health care team to assess patient needs, plan and modify care and implement interventions.
- Supervise nurses' aides or assistants.
- Evaluate nursing intervention outcomes, conferring with other health care team members as necessary.

Medical Records and Health Information Technician

Standard Occupational Code: 29-2071

Other Job Title(s): Medical Coder, Medical Biller, Medical Records Clerk, Medical Billing Specialist, Medical Records Technician, Health Information Technician

Description: 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 health care industry's numerical coding system.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		1,502	98	
Projected Employment (2018)		1,681	106	
Growth Rate (2013-2018)		12%	8%	
Average Annual Openings (2013-2018)		78	4	
Hourly Pay Range (San Diego)		\$14.24 Entry-level	\$18.54 Median	\$26.21 Experienced
Typical Educational Attainment		Postsecondary non-degree award (Certificate)		

Top Skills and Competencies

Technical	Non-Technical
Medical Coding	Communication
Health Information Technology	Writing
ICD-9-CM Coding	Organization
Medical Billing	Microsoft Excel
Electronic Medical Records	Research

Occupational Tasks

- Protect the security of medical records to ensure that confidentiality is maintained.
- Review records for completeness, accuracy and compliance with regulations.
- Retrieve patient medical records for physicians, technicians or other medical personnel.
- Assign the patient to diagnosis-related groups (DRGs), using appropriate computer software.
- Process patient admission or discharge documents.
- Transcribe medical reports.
- Resolve or clarify codes or diagnoses with conflicting, missing or unclear information by consulting with doctors or others or by participating in the coding team's regular meetings.
- Enter data, such as demographic characteristics, history and extent of disease, diagnostic procedures or treatment into computer.
- Identify, compile, abstract and code patient data, using standard classification systems.
- Release information to persons or agencies according to regulations.

Home Health Aide

Standard Occupational Code: 31-1011

Other Job Title(s): Home Health Aide, Caregiver, Home Health Assistant

Description: Provide routine individualized health care 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.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		7,644	677	
Projected Employment (2018)		9,157	879	
Growth Rate (2013-2018)		20%	30%	
Average Annual Openings (2013-2018)		470	56	
Hourly Pay Range (San Diego)		\$9.47 Entry-level	\$10.85 Median	\$12.92 Experienced
Typical Educational Attainment		Less than high school		

Top Skills and Competencies

Technical	Non-Technical
Home Health	English
Toileting	Clerical Duties
Home Care	Communication
Meal Preparation	Organization
Patient Bathing	Spanish

Occupational Tasks

- Maintain records of patient care, condition, progress, or problems to report and discuss observations with supervisor or case manager.
- Check patients' pulse, temperature and respiration.
- Provide patients with help moving in and out of beds, baths, wheelchairs or automobiles and with dressing and grooming.
- Care for patients by changing bed linens, washing and ironing laundry, cleaning or assisting with their personal care.
- Entertain, converse with, or read aloud to patients to keep them mentally healthy and alert.
- Administer prescribed oral medications, under the written direction of physician or as directed by home care nurse or aide and ensure patients take their medicine.
- Plan, purchase, prepare or serve meals to patients or other family members, according to prescribed diets.
- Accompany clients to doctors' offices or on other trips outside the home, providing transportation, assistance and companionship.

Nursing Assistants

Standard Occupational Code: 31-1014

Other Job Title(s): Certified Nurse Assistant, Patient Care Assistant, Patient Care Technician

Description: 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.

Fast Facts		San Diego County	Imperial County	
Current Employment (2013)		8,871	237	
Projected Employment (2018)		10,250	272	
Growth Rate (2013-2018)		16%	15%	
Average Annual Openings (2013-2018)		460	12	
Hourly Pay Range (San Diego)		\$11.44 Entry-level	\$13.15 Median	\$14.95 Experienced
Typical Educational Attainment		Postsecondary non-degree award (Certificate)		

Top Skills and Competencies

Technical	Non-Technical
Patient Care	English
Patient Assistance	Communication
Medical Terminology	Spanish
Acute Care	Lotus Notes
Administrative Functions	Organization

Occupational Tasks

- Answer patient call signals, signal lights, bells or intercom systems to determine patients' needs.
- Turn or reposition bedridden patients.
- Provide physical support to assist patients to perform daily living activities, such as getting out of bed, bathing, dressing, using the toilet, standing, walking or exercising.
- Review patients' dietary restrictions, food allergies and preferences to ensure patient receives appropriate diet.
- Measure and record food and liquid intake or urinary and fecal output, reporting changes to medical or nursing staff.
- Record vital signs, such as temperature, blood pressure, pulse or respiration rate, as directed by medical or nursing staff.
- Gather information from caregivers, nurses or physicians about patient condition, treatment plans or appropriate activities.
- Observe or examine patients to detect symptoms that may require medical attention, such as bruises, open wounds or blood in urine.

Occupational Therapy Assistants

Standard Occupational Code: 31-2011

Other Job Title(s): Certified Occupational Therapy Assistant

Description: 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.

Fast Facts		San Diego	Imperial County	
Current Employment (2013)		299	<10	
Projected Employment (2018)		355	<10	
Growth Rate (2013-2018)		19%	---	
Average Annual Openings (2013-2018)		20	---	
Hourly Pay Range (San Diego)		\$27.61 Entry-level	\$33.79 Median	\$40.20 Experienced
Typical Educational Attainment		Associate's degree		

Top Skills and Competencies

Technical	Non-Technical
Occupational Therapy	Communication
Rehabilitation	Writing
Treatment Planning	Lotus Notes
Patient/Family Education	Organization
Patient Care	Problem Solving

Occupational Tasks

- Select therapy activities to fit patients' needs and capabilities.
- Observe and record patients' progress, attitudes and behavior and maintain this information in client records.
- Communicate and collaborate with other health care professionals involved with the care of a patient.
- Maintain and promote a positive attitude toward clients and their treatment programs.
- Monitor patients' performance in therapy activities, providing encouragement.
- Instruct, or assist in instructing, patients and families in home programs, basic living skills or the care and use of adaptive equipment.
- Implement, or assist occupational therapists with implementing treatment plans designed to help clients function independently.
- Evaluate the daily living skills or capacities of physically, developmentally or emotionally disabled clients.
- Aid patients in dressing and grooming themselves.

Medical Assistants

Standard Occupational Code: 31-9092

Other Job Title(s): Medical Assistant, Clinical Assistant, Certified Medical Assistant, Medical Office Assistant

Description: 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.

Fast Facts		San Diego	Imperial County	
Current Employment (2013)		7,776	179	
Projected Employment (2018)		8,660	209	
Growth Rate (2013-2018)		11%	17%	
Average Annual Openings (2013-2018)		340	10	
Hourly Pay Range (San Diego)		\$13.14 Entry-level	\$16.12 Median	\$19.20 Experienced
Typical Educational Attainment		Postsecondary non-degree award (Certificate)		

Top Skills and Competencies

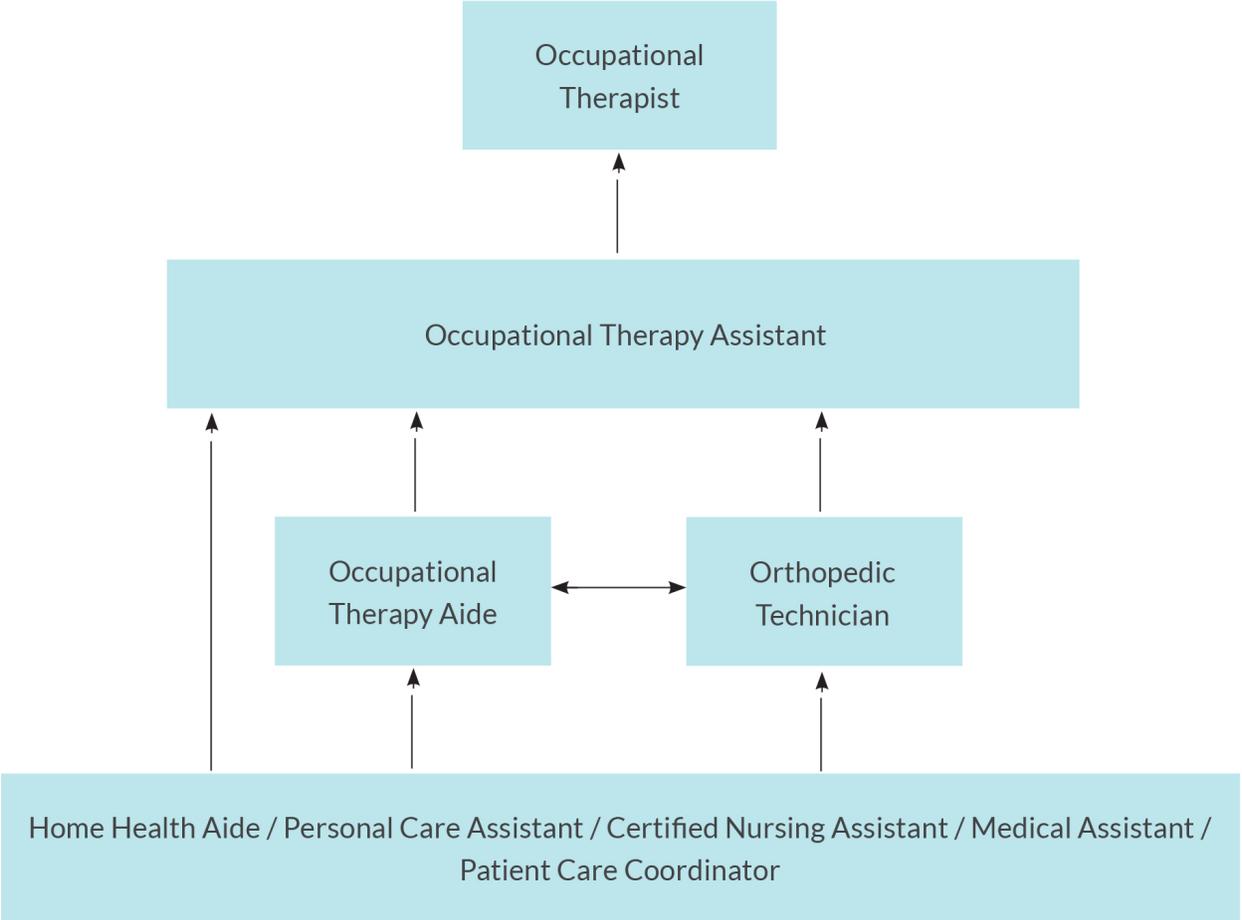
Technical	Non-Technical
Patient Care	English
Vital Signs Measurement	Communication
Appointment Setting	Spanish
Scheduling	File Management
Medical Terminology	Customer Service

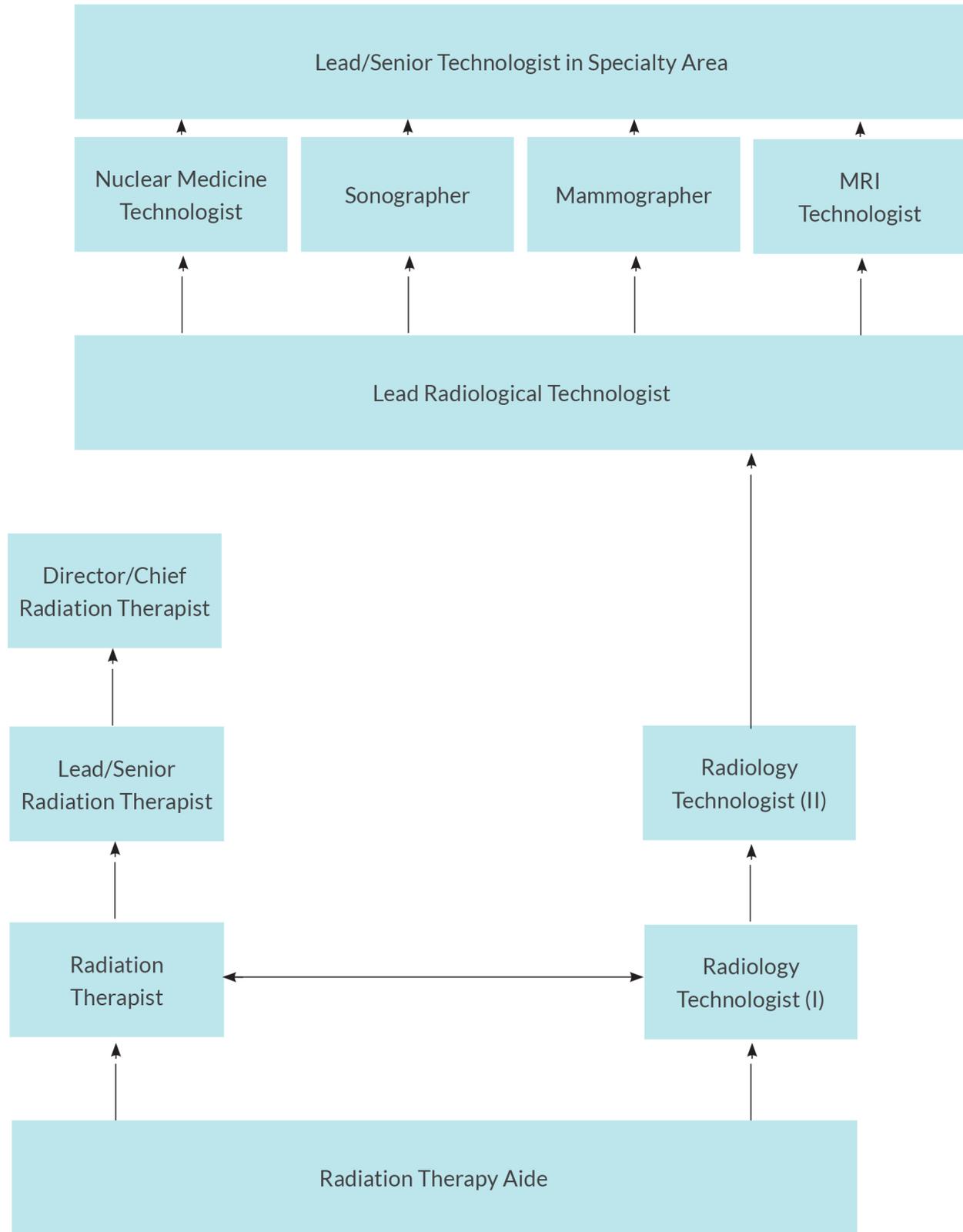
Occupational Tasks

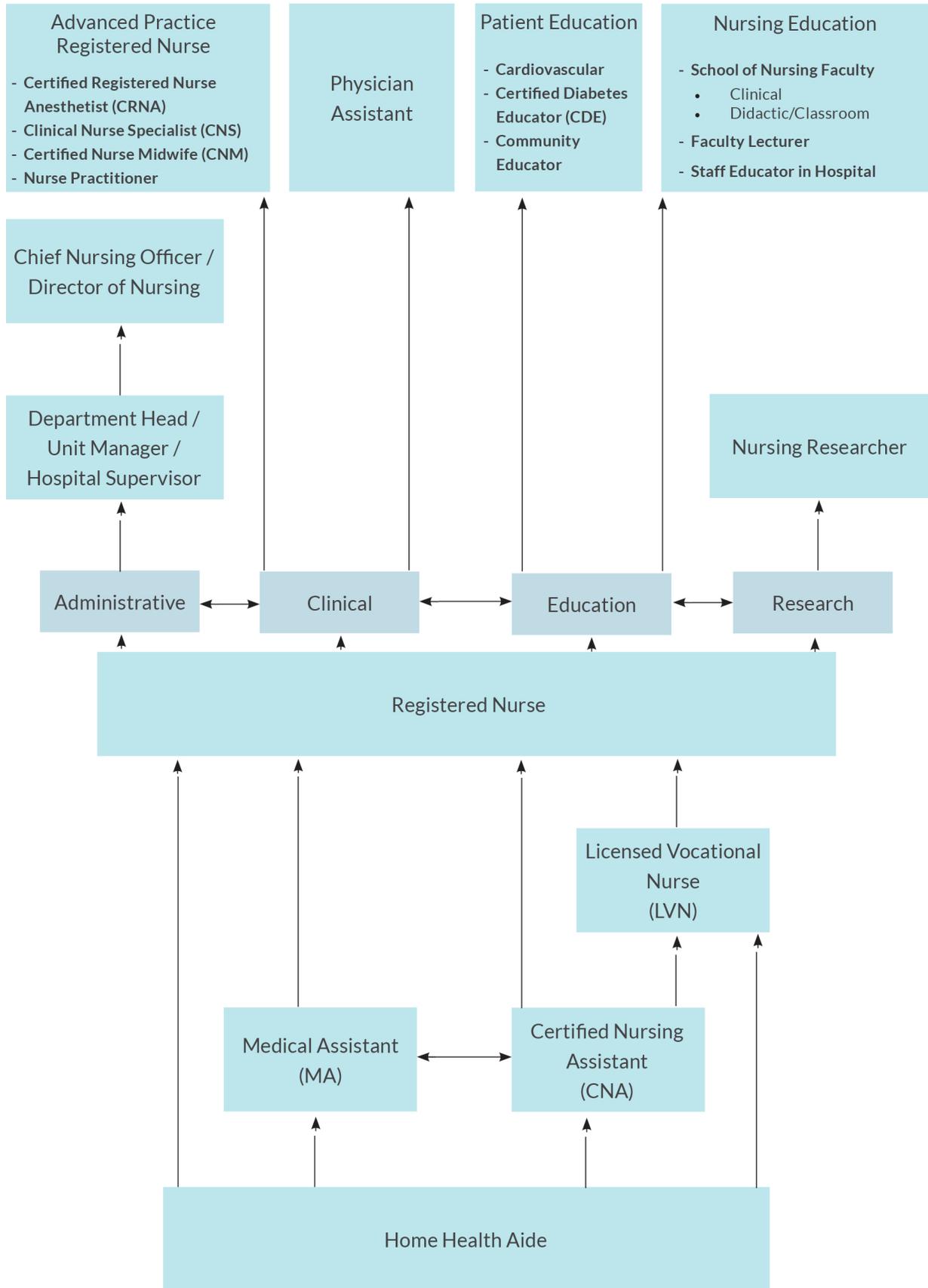
- Record patients' medical history, vital statistics or information such as test results in medical records.
- Prepare treatment rooms for patient examinations, keeping the rooms neat and clean.
- Interview patients to obtain medical information and measure their vital signs, weight and height.
- Show patients to examination rooms and prepare them for the physician.
- Prepare and administer medications as directed by a physician.
- Collect blood, tissue or other laboratory specimens, log the specimens and prepare them for testing.
- Authorize drug refills and provide prescription information to pharmacies.

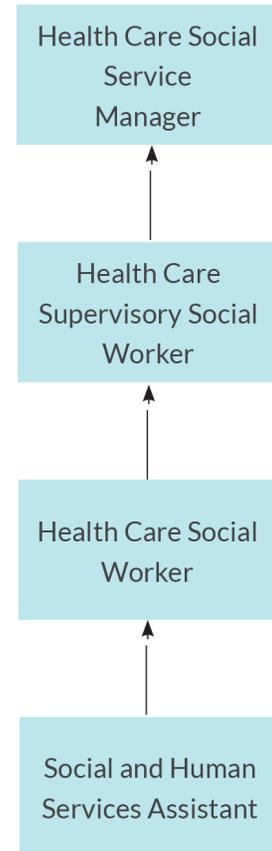
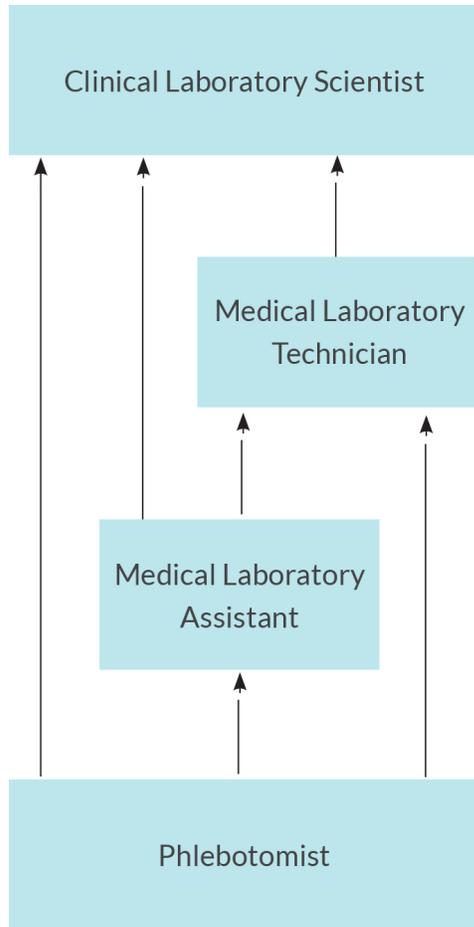
APPENDIX B: CAREER LATTICES

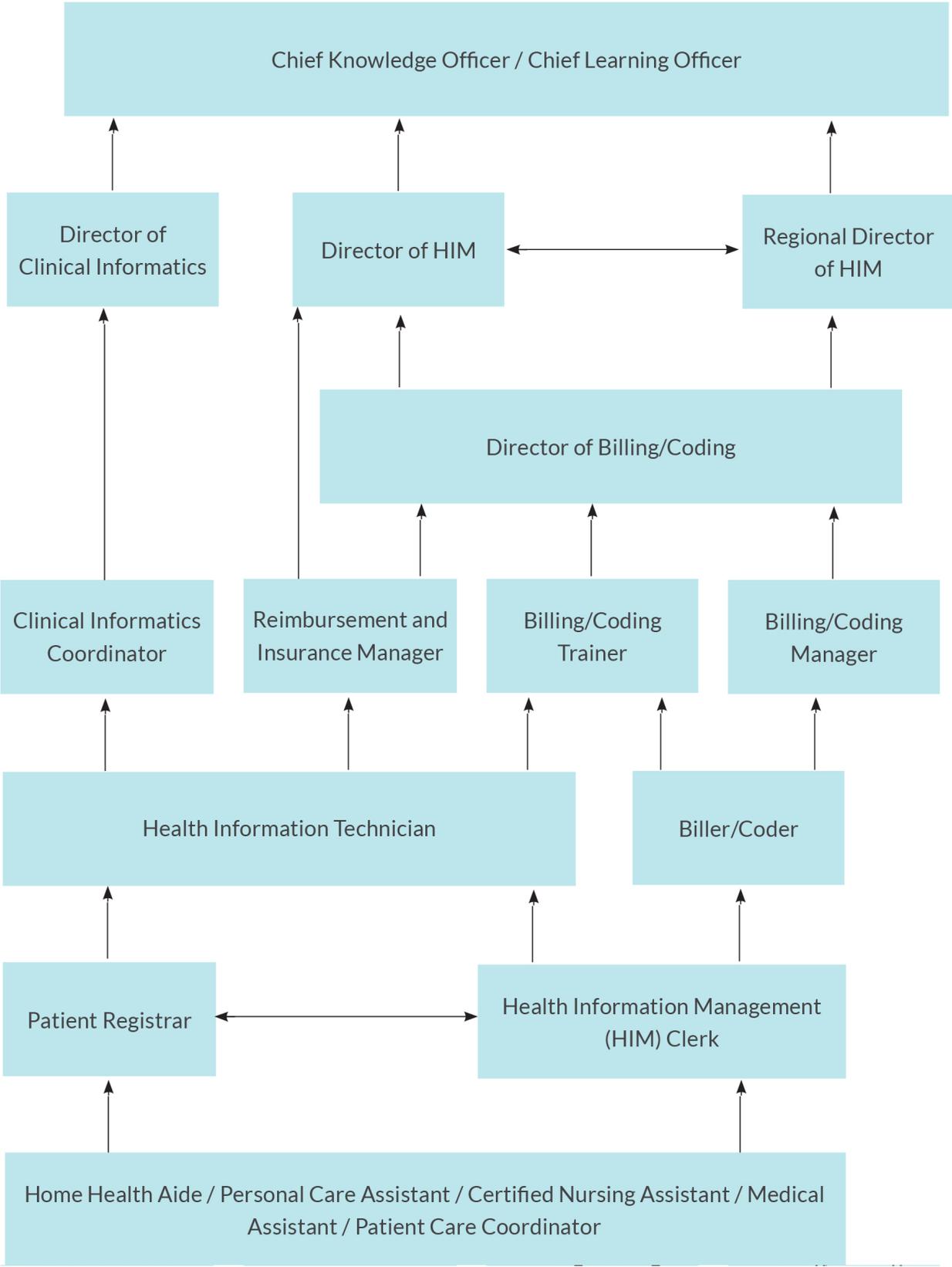
For job seekers looking for a position in Health Care, the following career lattices demonstrate the variety of possible professions and career development within the sector. Please note that these are **sample** career progressions and should only be used as references. Not all careers will progress in a similar manner.

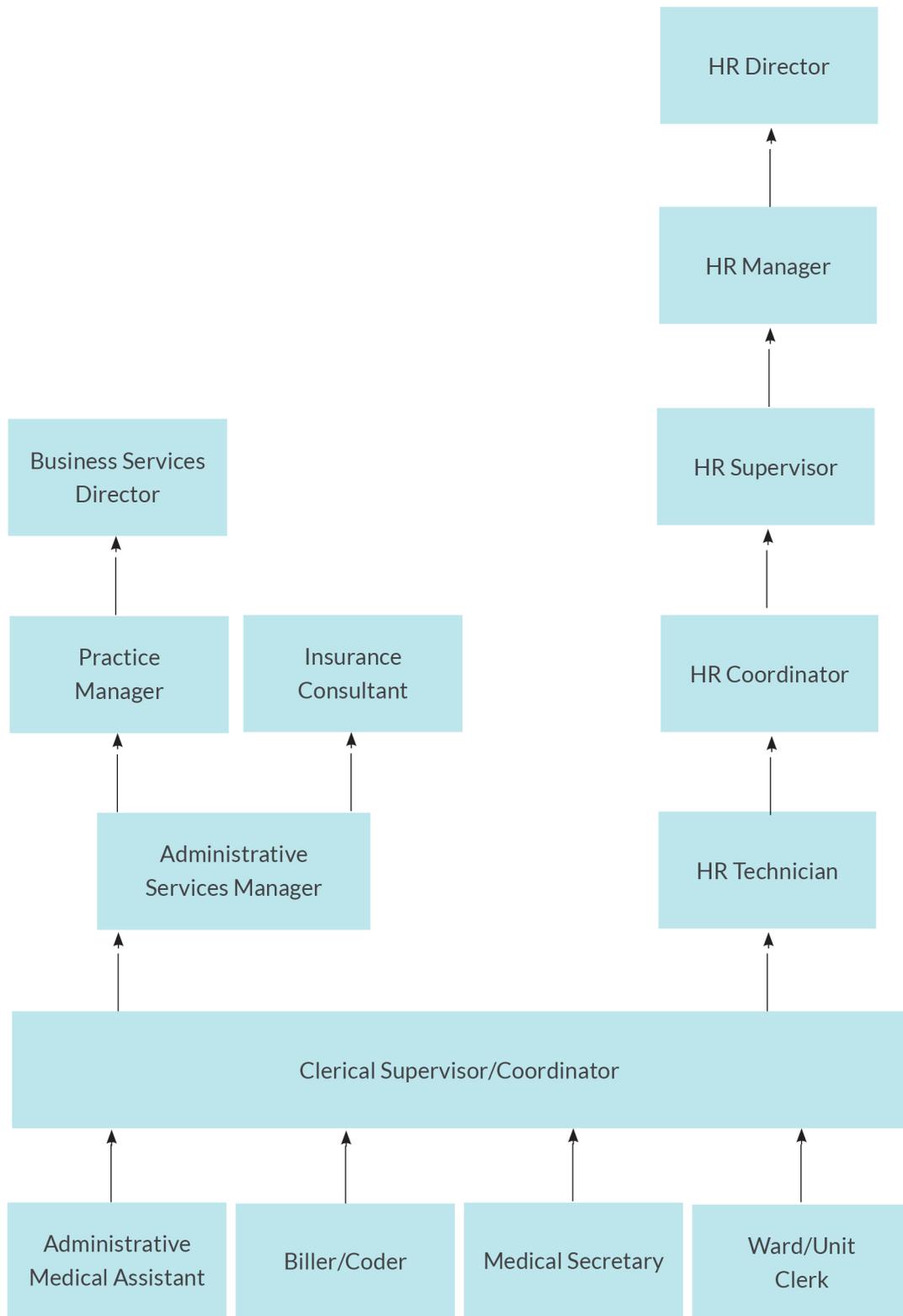


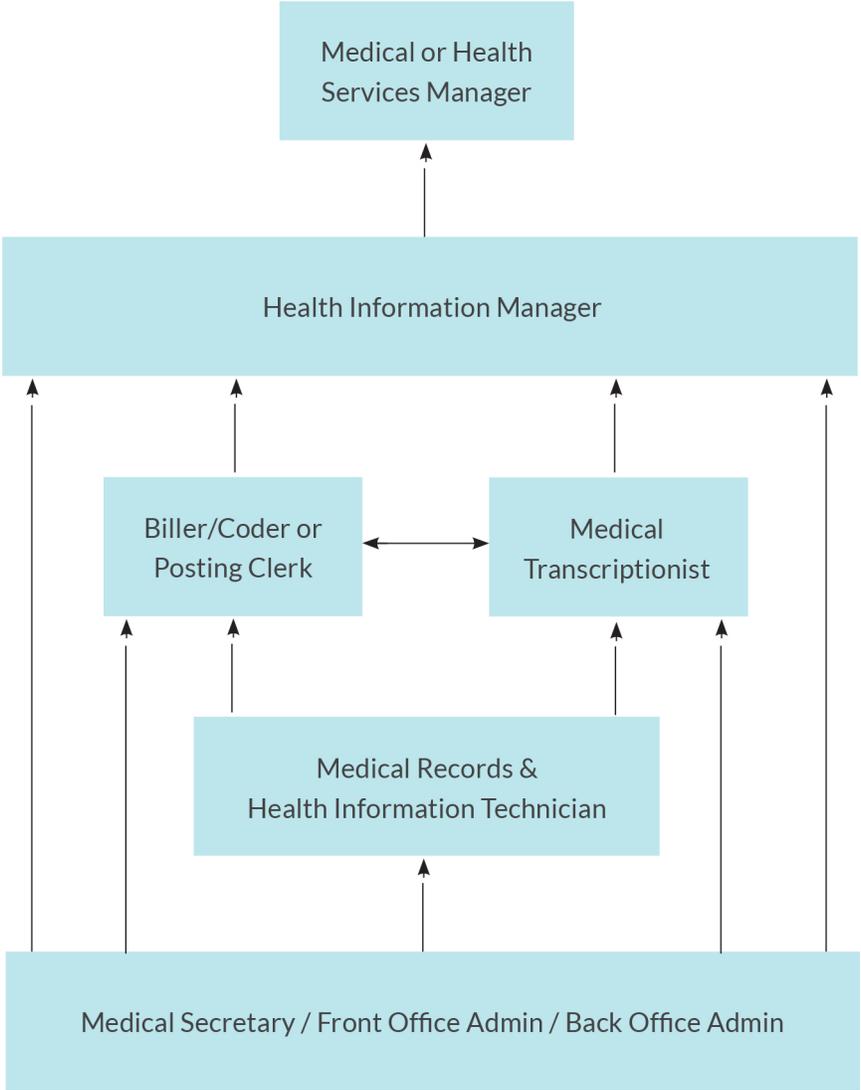


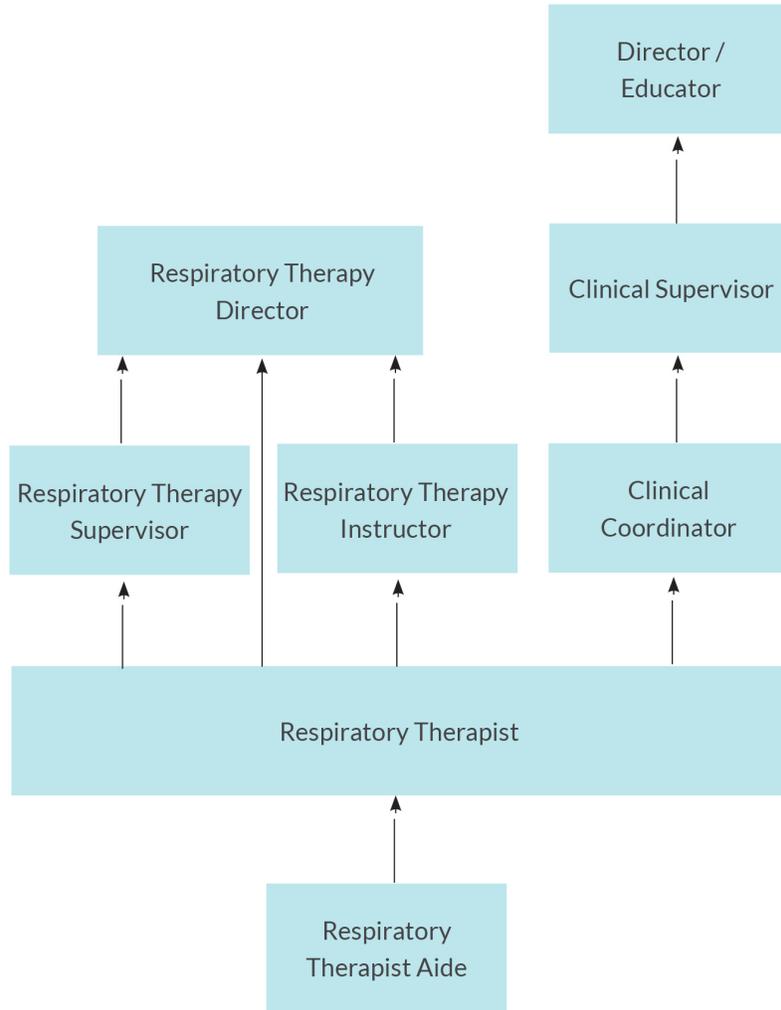


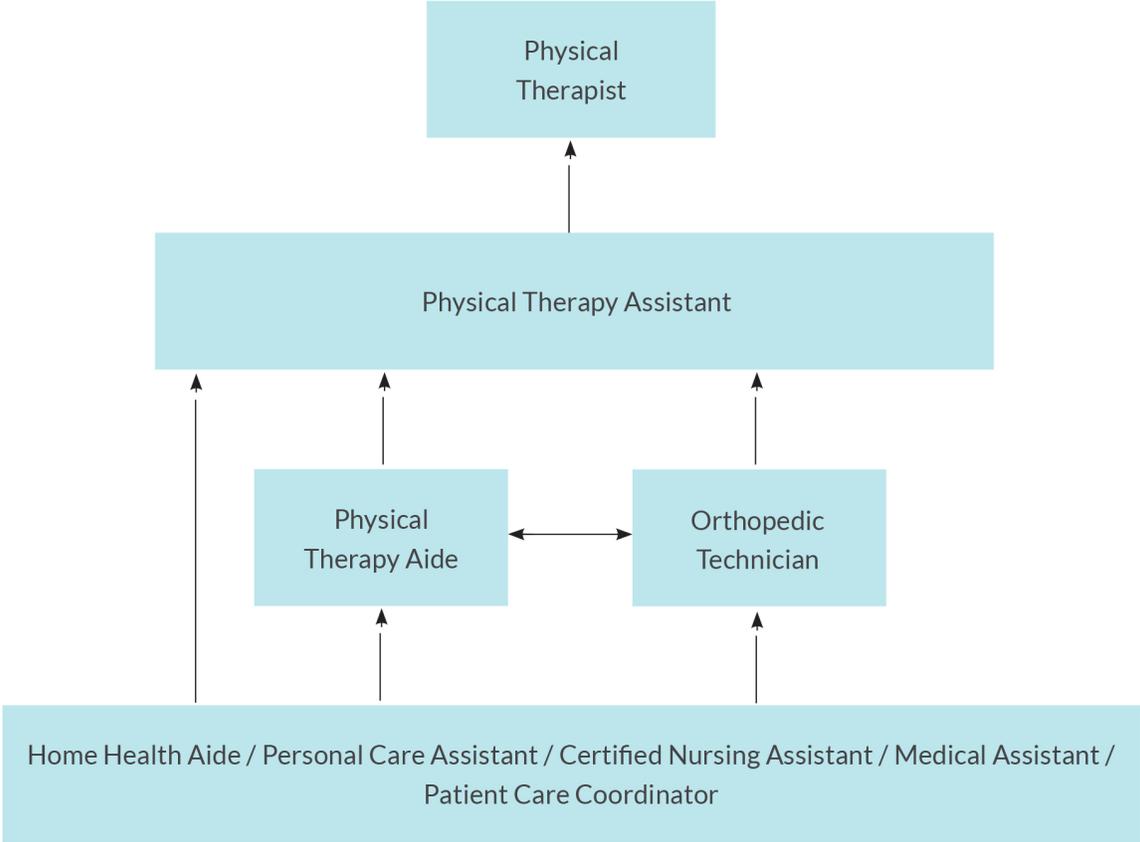












APPENDIX C: DEFINITIONS

North American Industry Classification System (NAICS) Codes

NAICS	Description
621	Ambulatory Health Care Services
622	Hospitals (Private)
623	Nursing and Residential Care Facilities

Standard Occupational Classification (SOC) Codes

SOC	Occupational Name in Report	Definition
21-1014 Nursing Assistants	Certified nursing assistants	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.
31-1011 Home Health Aides	Home health aides	Provide routing individualized health care 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 a patient
29-2061 Licensed Vocational and Licensed Practical Nurses	Licensed vocational nurses	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.
31-9092 Medical Assistants	Medical assistants	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.
29-1141 Registered Nurses	Registered nurses	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
29-2011 Medical and Clinical Laboratory Technologist	Clinical laboratory scientists	Perform complex medical laboratory tests for diagnosis, treatment and prevention of disease. May train or supervise staff.
29-2071 Medical Records and Health Information Technician	Coders	Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with requirements of the health care system and health care industry's numerical coding system.
29-2012 Medical and Clinical Laboratory Technician	Medical laboratory technicians	Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. Works under the supervision of a CLS. Must have a valid Medical Laboratory Technician license issued by the State of California.
31-2011 Occupational Therapy Assistant	Occupational therapy assistants	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.
29-1071 Physician Assistant	Physician assistants	Provide health care services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment, and counsel patients. May, in some cases, prescribe medication. Must graduate from an accredited educational program for physician assistants.t
29-1126 Respiratory Therapist	Respiratory therapists	Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians.
29-2054 Respiratory Therapy/ Technicians		Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.
21-1022 Health Care Social Workers	Health care social worker	Provide individuals, families, and groups with the psychosocial support needed to cope with illnesses. Services include advising family caregivers, providing patient education and counseling, and making referrals for other services. May also provide care and case management or interventions designed to promote health, prevent disease, and address barriers to access to health care.

APPENDIX D: METHODOLOGY

Health Care: Labor Market Analysis, San Diego & Imperial Counties was conducted by a group of collaborators. Organizations that conducted primary and secondary data collection and review included the San Diego Workforce Partnership (SDWP), the San Diego/Imperial Counties Community College Association (SDICCCA), California Community Colleges Health Workforce Initiative (HWI) & Centers of Excellence for Labor Market Research (COE), California Hospital Association (CHA) & Hospital Association of Southern California, Davis Research, and Probe Research.

For this project, Probe Research conducted an examination of labor market demand, supply and skills training-related data for 12 Health Care occupations in San Diego and Imperial Counties. Health Care-related statistics and literature pertaining to labor market trends, population demographics, workforce training and education were examined. Moreover, Probe Research examined Web-based job postings and analyzed research results for two employer surveys conducted in the region to determine priorities for training and workforce development within the Health Care sector in San Diego and Imperial Counties.

The research is aimed at providing jobseekers, workforce developers, educators, trainers, elected officials and other key stakeholders with labor market information for workforce resource management and planning.

Gap Analysis

Probe Research conducted a gap analysis of 12 occupations in the Health Care sector to determine the extent to which the supply of workers for these targeted high demand occupations would be sufficient to meet the demand generated by employers in the region.

Labor Market Demand

For the demand-side analysis, Probe Research examined health-related labor market data from several sources including:

- California Hospital Association/Hospital Association of Southern California 2013 Health Care Workforce Survey (CHA Survey): The 2013 Health Care Workforce Survey was an online survey conducted among major hospitals in California, broken down by County. Participation was voluntary and a total of 14 institutions in San Diego County and two institutions in Imperial County took the survey.
- Health Workforce Initiative Survey (HWI/COE Survey): In partnership with COE and Davis Research, HWI conducted a statewide survey of Health Care institutions, excluding major hospitals, in the State of California. A total of 178 institutions in San Diego County and nine institutions in Imperial County participated in the HWI Survey.
- EMSI Analyst data was used to provide a synopsis of traditional labor market information using data from more than 90 sources, including BLS. Current and projected occupational employment statistics were compiled for each of the targeted occupations in San Diego and Imperial Counties.
- **Burning Glass Data Series**, a web-based labor insights tool that tracks electronic job listings by industry, occupation, education and skill sets, was utilized to examine job postings data for the Health Care occupations posted online between Jan. 1 and Dec. 31, 2013.

Labor Market Supply

For the supply-side analysis, Probe Research and a group of other regional collaborators examined program completions for health-related occupations at public and private post-secondary institutions and

community colleges in San Diego and Imperial Counties for degree or certificate-granting institutions. The following data sources were accessed:

- Integrated Postsecondary Data System (IPEDS) is the post-secondary education data collection program for the National Center for Education Statistics with the U.S. Department of Education. The system provides data on the number of completions for educational programs.
- California Community Colleges Chancellor's Office MIS DataMart was accessed to collect information about students, courses and graduates at the community colleges in California.
- Regional Occupation Program (ROP) provides career preparation classes and services for youth (ages 16-21) and adults. There are 72 Regional Occupation Centers and Programs (ROCP) statewide. Data for programs in San Diego and Imperial Counties was directly provided to SDWP and SDICCCA by the ROPs.

Data Limitations

It should be noted that there are certain limitations to the data collected. For instance, while the **Burning Glass** data series was valuable for obtaining information on the number of job postings for different occupations, the ability to differentiate between new graduates and highly-experienced workers was limited. In addition, several employers participating in the Health Sector Forum indicated that while they may be seeking six registered nurses to fill positions within their institution, they might only advertise for one position and select candidates from the total number of applicants. As such, the data may underestimate the actual number of job openings in some instances. For this reason, the top mentions for skills and certifications identified in the job postings have been presented in order of highest to lowest numbers but the actual proportional breakdown of responses has been omitted.

The data collected on specific skills for Health Care occupations is based on data collected through the HWI/COE Survey and CHA Survey. In some instances, the sample size is small and should be viewed as directional only.

The research on programs for this labor market and training needs study involved a combination of primary and secondary research methodologies. The secondary research component included a review of materials provided by the SDWP Steering Committee as well as an online literature review of labor market data, statistics and employment trends in the Health Care sector in San Diego and Imperial Counties. The secondary research phase provided a basis for stakeholder consultations in the primary research phase, which involved a Health Sector Advisory Forum with Health Care employers and educators in San Diego and Imperial Counties. All research was conducted between April 7 and June 26, 2014.

Primary Data Collection

Statewide Health Care Surveys

In summer 2013, representatives from industry and academic organizations met to discuss aligning workforce research goals with the intent of improving data collection, minimizing survey fatigue of employers and reducing duplication of efforts. As a result, committed partners agreed to consolidate their individual employer/employee survey tools and to share the data when available for analysis. Represented at the meeting were:

- California Hospital Association (CHA)
- Hospital Association of Southern California (HASC)
- UCSF Institute for Health Policy Studies & Center for the Health Professions
- California Institute for Nursing & Health Care (CINHC)
- California Community Colleges' Health Workforce Initiative (HWI)

- California Community Colleges’ Centers of Excellence (COE)
- Futuresense, Inc.

Which occupations were targeted and why?

CHA member hospitals had been participating in the HASC quarterly survey for several years and the occupations included were ones that CHA and their membership determined to be critical for their research objectives. Similarly, the UCSF Institute and the CINHC had an existing annual research initiative aimed at documenting nursing profession workforce needs and used their own list of nursing titles.

It was determined that a survey of non-hospital health care employers conducted by the COE on behalf of the HWI and the community college system in 2013-2014 could greatly enhance the workforce picture for a subset of these occupations—those relevant to community college instruction as well as to HWI program goals. The following table matches Standard Occupational Code (SOC) titles to job classification titles and identifies the occupation classifications and/or job titles included in each study.

Occupation Title	Job Titles	HASC	COE
Health Care Social Worker	Social Worker (LCSW)	Y	Y
Pharmacist	Pharmacist	Y	
Physician Assistant	Physician Assistant	Y	
Physical Therapist	Physical Therapist	Y	
Respiratory Therapist	Respiratory Therapist	Y	
Registered Nurse	Registered Nurse – Staff Direct Care		
	Registered Nurse – New Hire	Y	Y
	Registered Nurse – Other	Y	Y
	Staff Registered Nurse		Y
Medical and Clinical Laboratory Technologist	Clinical Laboratory Scientist	Y	Y
Medical and Clinical Laboratory Technician	Medical Laboratory Technician	Y	Y
Cardiovascular Technologist and Technician	CVIR Technologist	Y	
Diagnostic Medical Sonographer	Ultrasound Technologist	Y	
Radiologic Technologist	Radiological Technologist	Y	
	CT Technologist	Y	
	MRI Technologist	Y	
Magnetic Resonance Imaging Technologist	MRI Technologist	Y	
Licensed Vocational and Practical Nurse	Licensed Vocational Nurse	Y	Y
Medical Records and Health Information Technician	[Medical] Coder	Y	Y
Home Health Aide	Home Health Aide	Y	Y
Nursing Assistant	Certified Nursing Assistant	Y	Y
	Unlicensed Nursing Aide/Assistant	Y	
Occupational Therapy Assistant	Occupational Therapy Assistant	Y	Y
Medical Assistant	Medical Assistant	Y	Y

For the HWI/COE non-hospital Health Care employer survey, the subset of occupations to include was discussed and ultimately determined by the HWI team—the Sector Navigator and the regional Deputy Sector Navigators. Considerations included 1) occupations with high levels of employment statewide; 2) occupations requiring community college-level career technical education; 3) occupations with high numbers of existing community college programs; and 4) occupations considered part of an in-demand or successful “career pathway” (for example, physician assistant), among others.

Who was involved and what was the resulting research contribution?

From Industry: HASC, a chapter of CHA, revised its 2013 Quarter 4 survey of member hospitals statewide regarding employment levels, vacancies, hiring needs, etc., to include two new job titles (home health aides and certified nursing assistants), and supplemental employment trend questions were submitted by the COE/HWI. A total of 22 job titles or classifications were included. The CHA Survey was conducted February and early March 2014.

From the UC system: UCSF Institute for Health Policy Studies & Center for the Health Professions—Annually conducts a survey of chief nursing officers in hospitals statewide in partnership with CHA/HASC and the California Institute for Nursing & Health Care.

From the Community Colleges: HWI and the COE conducted a non-hospital employer survey statewide in spring of 2014. The survey aligned data points with CHA's 2013 Quarter 4 survey, and targeted 12 occupations. The survey was in the field in March and April 2014.

CHA Survey Method

The CHA survey is conducted quarterly and is intended to help the association and its member hospitals assess the operational impact of vacancies on hospitals. The data is also used to collect planning information about the current state of health care workforce supply and demand, to project trends for hospitals in California, advocate for Health Care education and support local policymakers in their workforce development planning. Topics addressed in the survey included:

- Vacancy impacts on patient care
- Vacancy impacts on hospital efficiencies
- Workforce development initiatives
- Limiting services due to vacancies
- Hospitals' workforce supply
- Employee age data by occupation
- Difficulty with recruiting qualified applicants
- Professional development opportunities

The 2013 Quarter 4 survey was in the field from Jan. 8, 2014 through Feb. 7, 2014, and solicited employment data from respondents for the 4th quarter of 2013 (Oct. 1–Dec. 31). Links to participate in the survey online were distributed to representatives at member hospitals; however, due to the length and complexity of the survey, if requested, the survey could be submitted in Excel format. Post-survey, HASC and Futuresense, Inc. staff followed up with respondents if necessary and then merged the online and Excel responses into one data set.

For 2013 Quarter 4 collection, responses were collected for 192 hospital workplaces (individual records were collected by location but sometimes submitted from a central location). CHA currently represents 385 member hospitals.

HWI/COE Survey Method

The HWI survey was conducted as a one-time effort in spring of 2014 and was intended to enhance existing survey efforts, inform community college program and course decision-making and assist the HWI DSNs with regional planning. The survey questionnaire was developed jointly by the COE and HWI. Consideration was given to the goal of aligning data points with the CHA/HASC data as well as the HWI and community college goals and objectives. Topics addressed in the survey included:

- Estimates of current employment, projected employment (next 12 months) and replacement needs

- Estimated labor market gaps (over or undersupply)
- Level of difficulty hiring for health care occupations
- Information on professional development support/spending/investment by health care employers
- Educational preferences for health care occupations
- Degree/certification preferences for hiring health care workers
- Other occupational and workplace trends

The online and phone survey was conducted by Davis Research, LLC and was in the field March and April 2014. Respondents were recruited from health care industry subsectors: Ambulatory Health Care Services (NAICS 621) and Nursing and Residential Care Facilities (NAICS 623). In a few cases, hospitals (NAICS 622) were surveyed due to low response rates in some regions for certain occupations. However, hospitals were not approached if they had already participated in the CHA/HASC effort and no reference was made to CHA/HASC in marketing the survey.

Statewide, the COE/HWI effort resulted in 1,603 employer responses: 1,321 from Ambulatory Health Care Services, 251 from Nursing and Residential Care Facilities, and 31 from Hospitals. As each employer survey included question sets for more than one occupation, the combined responses for the 12 occupations numbered 3,499.

Health Sector Advisory Forum

SDWP, in cooperation with SDICCCA (representing nine local community colleges) and the regional Deputy Sector Navigator for the Health Sector, hosted the San Diego Regional Health Sector Advisory Forum. The event took place on May 21, 2014 from 11:30 a.m. to 1:30 p.m. at Griffin Gate at Grossmont College, San Diego.

The purpose of the forum was to present preliminary research findings on labor market demand and supply for health sector occupations, and to provide an opportunity for stakeholders to validate the research and provide feedback regarding industry trends and priorities for skills development. Probe Research presented interim labor market analysis study results and facilitated the session with approximately 35 stakeholders in attendance, including employers and representatives from post-secondary academic institutions and health-related organizations within San Diego and Imperial Counties.

Research participants were recruited from a list of targeted respondents identified by SDWP (e.g., businesses, post-secondary institutions and health-related organizations falling within the catchment areas of SDWP). An email was sent by SDWP to human resource managers, business owners and managers of these organizations explaining the purpose of the research and inviting them to attend the Health Sector Advisory Forum.

Secondary Data Collection and Analysis

The methodological approach for this secondary data review and analysis consisted of the following:

Crosswalks

Probe Research prepared a Crosswalk Chart containing information for each of the 12 occupations under review. This involved cross-referencing the SOC codes for each occupation with the codes used for the Classification of Instructional Programs (CIP) and the Taxonomy of Programs (TOP).

The 2010 SOC codes were developed by federal statistical agencies to classify occupations into broad categories with similar job duties and skills for the purpose of collecting and analyzing data. All 66 job titles are classified into one of 840 detailed occupations according to their occupational definition.

The CIP codes were developed by the U.S. Department of Education's National Center for Education Statistics (NCES) to facilitate consistency in the tracking, assessment, and reporting of fields of study and program completions.

The TOP is a system of numerical codes developed by the Educational Services Division of the Chancellor's Office at the California Community Colleges. The codes are used at the state level to collect and report information on programs and courses in different colleges throughout the state, with similar outcomes. A copy of the Crosswalk Chart used for this research is included in Appendix E.

Completer Information

Information regarding the outcomes at the nine community colleges in San Diego and Imperial Counties was accessed at the site datamart.cccco.edu/Outcomes/Default.aspx. This listing provided a Program Awards Summary for each occupation title. Our analysis focused only on degree or certificate-granting postsecondary institutions in San Diego and Imperial Counties.

The ROPs were listed on the Eligible Training Provider List (ETPL) site, which included mostly high schools and some post-secondary institutions. Once again, our analysis focused exclusively on degree or certificate-granting postsecondary institutions in San Diego and Imperial Counties. SDWP and community college collaborators contacted these institutions to access information on the total number of program completions for these programs.

The IPEDS website provided information on the number of graduates from Health Care programs related to the 12 occupations under review. The IPEDS system is the primary source for data on colleges, universities and technical and vocational postsecondary institutions in the U.S. The data system was developed by the NCES, which is the primary federal entity for collecting and analyzing education-related data in the U.S.

Using the College Navigator tool, the institution name was entered into the system and the "program/majors" tool used to access information on each program, as well as the corresponding number of graduates for relevant "Health Professions and Related Programs" within each institution. A list of programs and graduates from each institution was compiled for the "Number of Awards Conferred" for >1 year certificates, 1 year to >2 year certificates, associate degrees, etc.

A summary of the degrees and certificates conferred for each of the targeted occupations is provided in this report.

APPENDIX E: CROSSWALKS BETWEEN OCCUPATIONS AND PROGRAMS

Standard Occupation Class Title (SOC)	SOC Code	Classification of Instructional Programs (CIP) Title	CIP Code	Taxonomy of Programs (TOP) Title	TOP Code
Nursing Assistants	31-1014	Nursing Assistant/Aide and Patient Care Assistant/Aide	51.3902	Certified Nurse Assistant	1230.30
Home Health Aides	31-1011	Home Health Aide/Home Attendant	51.2602	Home Health Aide	1230.80
Personal Care Aides	39-9021	Home Health Aide/Home Attendant	51.2602	Home Health Aide	1230.80
Licensed Vocational Nurses	29-2061	Licensed Practical/Vocational Nurse Training	51.3901	Licensed Vocational Nursing	1230.20
Licensed Vocational Nurses	29-2061	Practical Nursing, Vocational Nursing and Nursing Assistants, Other	51-3999	Licensed Vocational Nursing	1230.20
Medical Assistants	31-9092	Medical/Clinical Assistant	51.0801	Medical Assisting	1208.00
Medical Assistants	31-9092	Medical/Clinical Assistant	51.0801	Clinical Medical Assisting	1208.10
Registered Nurses	29-1141	Registered Nursing/Registered Nurse	51.3801	Nursing	1230.00
Registered Nurses	29-1141	Registered Nursing/Registered Nurse	51.3801	Registered Nursing	1230.10
Registered Nurses	29-1141	Nursing Administration	51.3802	Registered Nursing	1230.10
Registered Nurses	29-1141	Adult Health Nurse/Nursing	51.3803	Registered Nursing	1230.10
Registered Nurses	29-1141	Family Practice Nurse/Nursing	51.3805	Registered Nursing	1230.10
Registered Nurses	29-1141	Maternal/Child Health and Neonatal Nurse/Nursing	51.3806	Registered Nursing	1230.10
Registered Nurses	29-1141	Nursing Science	51.3808	Registered Nursing	1230.10
Registered Nurses	29-1141	Pediatric Nurse/Nursing	51.3809	Registered Nursing	1230.10
Registered Nurses	29-1141	Psychiatric/Mental Health Nurse/Nursing	51.3810	Registered Nursing	1230.10
Registered Nurses	29-1141	Public Health/Community Health Nurse/Nursing	51.3811	Registered Nursing	1230.10
Registered Nurses	29-1141	Preoperative/ Operating Room and Surgical	51.3812	Registered Nursing	1230.10
Registered Nurses	29-1141	Clinical Nurse Specialist	51.3813	Registered Nursing	1230.10
Registered Nurses	29-1141	Critical Care Nursing	51.3814	Registered Nursing	1230.10

Standard Occupation Class Title (SOC)	SOC Code	Classification of Instructional Programs (CIP) Title	CIP Code	Taxonomy of Programs (TOP) Title	TOP Code
Registered Nurses	29-1141	Occupational and Environmental Health Nursing	51.3815	Registered Nursing	1230.10
Registered Nurses	29-1141	Emergency Room/Trauma Nursing	51.3816	Registered Nursing	1230.10
Registered Nurses	29-1141	Palliative Care Nursing	51.3819	Registered Nursing	1230.10
Registered Nurses	29-1141	Geriatric Nurse/Nursing	51.3821	Registered Nursing	1230.10
Registered Nurses	29-1141	Women's Health Nurse/Nursing	51.3822	Registered Nursing	1230.10
Medical and Clinical Laboratory Technologist	29-2011	Clinical Laboratory Science/Medical Technology/Technologist	51.1005	n/a	n/a
Medical and Clinical Laboratory Technologist	29-2011	Historic Technology/Technologist	51.1007	n/a	n/a
Medical and Clinical Laboratory Technologist	29-2011	Cytogenetic/Genetics/Clinical Genetics Technology/Technologist	51.1010	n/a	n/a
Medical and Clinical Laboratory Technologist	29-2011	Clinical/Medical Laboratory Science and Allied Professions, Other	51.1099	n/a	n/a
Coders, Health Information	29-2071	Medical Insurance Coding Specialist/Coder	51.0713	Health Information Coding	1223.10
Medical and Clinical Laboratory Technician	29-2012	Clinical /Medical Laboratory Technician	51.1004	Medical Laboratory Technology	1205.00
Medical and Clinical Laboratory Technician	29-2012	Clinical /Medical Laboratory Technician	51.1004	Medical Laboratory Technology	1205.00
Medical and Clinical Laboratory Technician	29-2012	Histologic Technician	51.1008	Medical Laboratory Technology	1205.00
Medical and Clinical Laboratory Technician	29-2012	Clinical /Medical Laboratory Science and Allied Professions, Other.	51.1099	Medical Laboratory Technology	1205.00
Occupational Therapy Assistant	31-2011	Occupational Therapist Assistant	51.0803	Occupational Therapy Technology	1218.00
Respiratory Therapist	29-1126	Respiratory Care Therapy/Therapist	51.0908	Respiratory Care/Therapy	1210.00
Respiratory Therapy/Technicians	29-2054	Respiratory Care Therapy/Therapist	51.0908	Respiratory Care/Therapy	1210.00
Physician Assistant	29-1071	Physician Assistant	51.0912	Physician's Assistant	1206.00
Health Care Social Workers	21-1022	Clinical/Medical Social Work	51.1503	Human Services	

APPENDIX F: REGIONAL COMMUNITY COLLEGES HEALTH PROGRAMS

C = Credit, N = Noncredit

Top Code	Program	Cuyamaca	Grossmont	Imperial Valley	MiraCosta	Palomar	SD City	SD Mesa	SD Miramar	Southwestern	SD Cont. Ed
2140.00	Medical Interpreter									C	
1205.00	Medical Laboratory Technology								C	C	
1223.00	Medical Transcription & Health Information Systems					C		C			
1239.00	Mental Health Aide							C			
	Nurse Assistant – Rehabilitative										N
1230.30	Nursing Assistant Training										N
1218.00	Occupational Therapy Assistant		C								
	Operating Room Nursing									C	
1214.00	Orthopedic Assistant		C								
0956.70	OSHA 10 – General Industry Safety	N					N				
1251.00	Paramedic/Emergency Medical Technology			C		C				C	
	Personal care assistant/caregiver										N
1221.00	Pharmacy Technology			C							
1222.00	Physical Therapist Assistant							C			
	Quality Home Care Provider									N	
1225.00	Radiologic Technology							C			
1230.10	Registered Nursing		C	C	C	C	C			C	
1210.00	Respiratory Care/Therapy		C								
1217.00	Surgical Technician				C					C	
1223.00	Telemetry		C								
0102.10	Veterinary Technologists and Technicians							C			

C = Credit, N = Noncredit

Top Code	Program	Cuyamaca	Grossmont	Imperial Valley	MiraCosta	Palomar	SD City	SD Mesa	SD Miramar	Southwestern	SD Cont. Ed
1208.00	Anesthesia Tech		C								
0430.00	Biotechnology and Biomedical Technology				C		C		C	C	
1213.00	Cardiovascular Technician		C								
	Central Service Technology									C	
	Certified Nursing Assistant				C					C	
1214.10	Dental Assistant					C		C			
1240.20	Dental Hygienist									C	
	Dietetic Service Supervisor							C			
0303.00	Environmental Health & Safety Technician Training	N					N				
0113.00	Food Preparation for Health Care Professionals										N
1309.00	Gerontology						C				
0303.00	Hazardous Materials Technician Training	N					N				
1230.80	Home Health Aide				C		C				N
0956.70	Industrial and Occupational Safety and Health	C/ N					C/ N		C		
0955.00	Laboratory Science Technology								C		
1230.20	Licensed Vocational Nursing			C	C				C		
1262.00	Massage Therapy				C						
1208.00	Medical Assisting			C				C		C	
1208.10	Clinical Medical Assisting									C	
1208.20	Administrative Medical Assisting				C	C				C	
1223.10	Medical Coding and Insurance		C					C		C	

APPENDIX G: EDUCATION PROGRAM COMPLETIONS

San Diego County

Institution	Certificates	A.A. / A.S.	B.A. / B.S.	2012-2013 Completions
Respiratory Care Therapy/Therapist				
California College San Diego - San Diego	0	138	19	157
Concorde Career College - San Diego	32	0	0	32
Grossmont College	0	28	0	28
Pima Medical Institute - Chula Vista	0	46	0	46
Sub-total	32	212	19	263
Registered Nursing				
MiraCosta College	1	51	0	52
Grossmont College	0	88	0	88
San Diego City College	0	65	0	65
Palomar College	0	48	0	48
Southwestern College	0	65	0	65
Kaplan College - San Diego Campus	0	164	0	164
National University	0	30	263	293
United States University (USU)	70	0	0	70
Azusa Pacific University	0	0	25	25
California State University - San Marcos	0	0	166	166
Point Loma Nazarene University	0	0	66	66
San Diego State University	0	0	166	166
Sub-Total	71	511	686	1,268
Clinical Laboratory Science/Medical Technology/Technologist				
National University	0	0	4	4
Sub-total	0	0	4	4
Clinical/Medical Laboratory Technician				
San Diego Miramar College	22	9	0	31
Southwestern College	0	11	0	11
Sub-total	22	20	0	42
Licensed Vocational Nurse				
Kaplan College - San Diego Campus	188	0	0	188
Kaplan College - Vista	99	0	0	99
MiraCosta College	19	6	0	25
National University	0	0	19	19
San Diego City College	5	0	0	5
Southwestern College	4	4	0	8
Concorde Career College - San Diego	37	0	0	37
Sub-total	352	10	19	381
Health Information/Medical Records/Technology/Technician/Medical Insurance Coding Specialists/Coder				

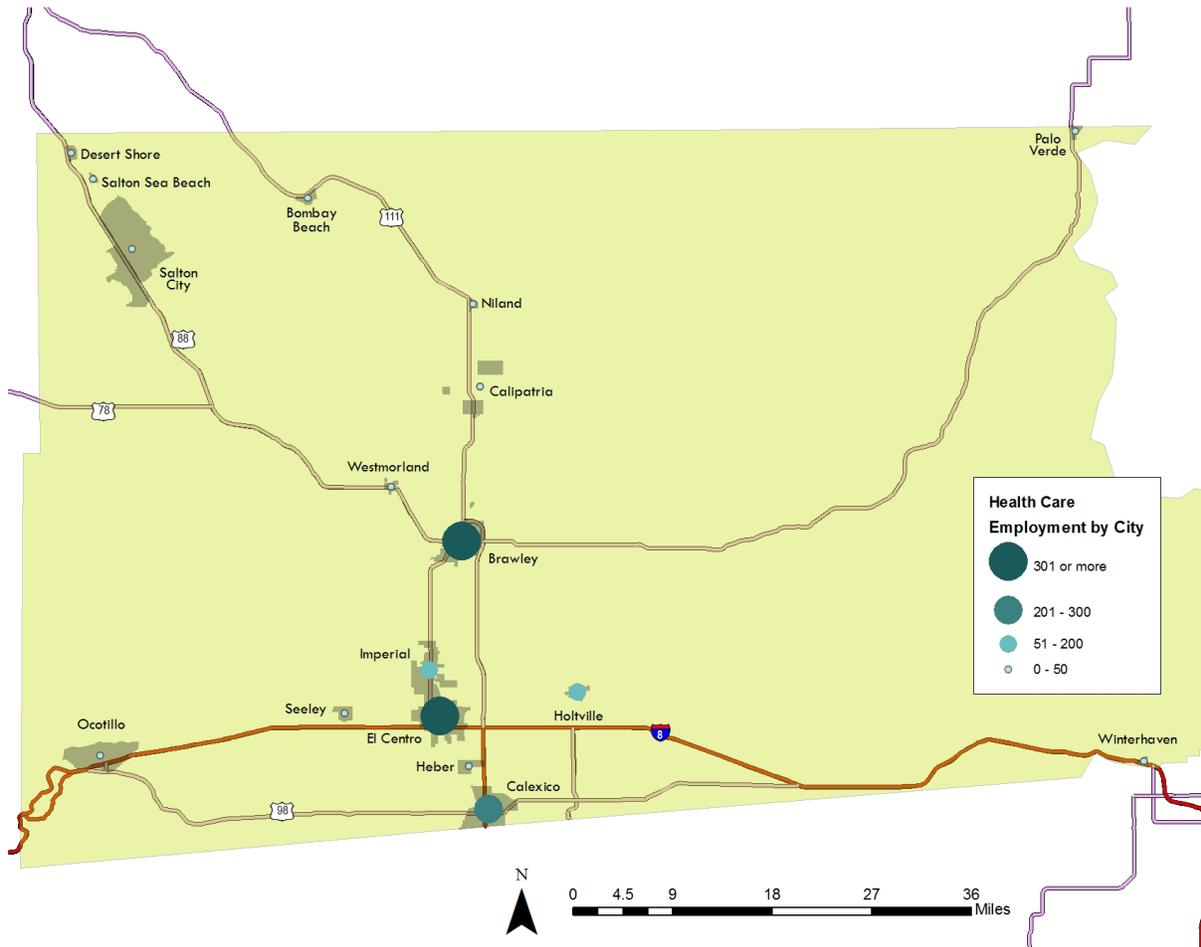
Kaplan College - San Diego Campus	0	10	0	10
San Diego Mesa College	0	23	0	23
Concorde Career College - San Diego	3	0	0	3
Kaplan College - Chula Vista	43	0	0	43
Kaplan College - San Diego Campus	62	0	0	62
Kaplan College - Vista	55	0	0	55
San Diego College	145	0	0	145
Southwestern College	7	0	0	7
San Diego College	40	0	0	40
Sub-total	355	33	0	388
Health Aide				
Kaplan College - San Diego Campus	165	0	0	165
San Diego Continuing Education	30			30
Sub-total	195	0	0	195
Nursing Assistant/Aide and Patient Care Assistant/Aide				
Kaplan College - San Diego Campus	70	0	0	70
Kaplan College - Vista	31	0	0	31
MiraCosta College	111	0	0	111
Sub-total	212	0	0	212
Allied Health and Medical Assisting Services/Medical/Clinical Assistant				
Kaplan College - Vista	108	0	0	108
Advanced Training Associates	49	7	0	56
California College San Diego - National City	0	11	0	11
California College San Diego - San Diego	0	163	0	163
California College San Diego - San Marcos	0	7	0	7
Center for Employment Training (CET) - San Diego	32	0	0	32
Concorde Career College - San Diego	229	0	0	229
Kaplan College - Chula Vista	153	0	0	153
Kaplan College - San Diego Campus	118	0	0	118
Kaplan College - Vista	225	0	0	225
MiraCosta College	32	8	0	40
Palomar College	2	3	0	5
Pima Medical Institute - Chula Vista	143	0	0	143
San Diego College	94	0	0	94
San Diego Mesa College	17	8	0	25
Southwestern College	10	3	0	13
Sub-total	1,212	210	0	1,422
Occupational Therapy Assistant				
Grossmont College	0	19	0	19
Sub-total	0	19	0	19
Social Worker/Human Services – Health Care				
Cuyamaca College	0	12	0	12

Southwestern College	0	9	0	9
San Diego City College	1	8	0	9
Sub-total	1	29	0	30
Total	2,1	1,04	7	4,220

Imperial County

Institution	Certificates	A.A. / A.S.	B.A. / B.S.	2012-2013 Completions
Registered Nursing				
Imperial Valley College	0	37	0	37
San Diego State University - Imperial Valley Campus	0	0	21	21
Sub-total	0	37	21	58
Licensed Vocational Nursing				
Imperial Valley College	12	15	0	27
Sub-total	12	15	0	27
Medical/Clinical Assistant				
Imperial Valley College	11	0	0	11
Sub-total	11	0	0	11
Social Worker/Human Services – Health Care				
Imperial Valley College	1	7	0	8
Sub-total	1	7	0	8
Total	24	59	21	108

Health Care Employment in Imperial County



Datasource: InfoUSA. Map designed by Centers of Excellence, San Diego and Imperial Region.

APPENDIX I: EMPLOYER SURVEYS

California Hospital Association (CHA) Survey

This instrument has been edited and cleaned to include only key questions from the survey.

Section I: [Please list all current full-time / part-time / per diem employees at your location(s).]

- (a) All Employees (Head Count)
- (b) NURSING Registered Nurse - Staff (Not New Graduates) Direct Care
- (c) Registered Nurse - Other
- (d) RN-New Graduate (less than 6 months experience)
- (e) Certified Nursing Assistant
- (f) Home Health Aide
- (g) Licensed Vocational Nurse
- (h) Unlicensed Nursing Aide/Assistant
- (i) ALLIED HEALTH Coder
- (j) Clinical Laboratory Scientist
- (k) CT Technologist
- (l) CVIR Technologist
- (m) Medical Assistant
- (n) Medical Laboratory Technician
- (o) MRI Technologist
- (p) Occupational Therapy Assistant
- (q) Pharmacist
- (r) Physical Therapist
- (s) Physician Assistant
- (t) Radiological Technologist
- (u) Respiratory Therapist
- (v) Social Worker (LCSW)
- (w) Ultrasound Technician

Using the occupational list above...

Section II: [Please list all full-time / part-time / per diem employees hired between Oct. 1 and Dec. 31, 2013.]

Section III.a: [Please list all full-time / part-time / per diem voluntary separations between Oct. 1 and Dec. 31, 2013.]

Section III.b: [Please list all full-time / part-time / per diem involuntary separations between Oct. 1 and Dec. 31, 2013.]

Section IV: [Please list all full-time / part-time / per diem layoffs between Oct. 1 and Dec. 31, 2013.]

Section V: [Please list all full-time / part-time / per diem headcount as of pay period closest to December 31, 2013.]

Section VI: [Please list all full-time / part-time / per diem job openings as of pay period closest to December 31, 2013.]

Section VII: Please indicate the number of full-time / part-time / per diem contract, agency and traveling nurses you staffed as of Dec. 31 2013.

- (a) TRAVELING/CONTRACT NURSES Registered Nurses (RNs)
- (b) Licensed Vocational Nurses (LVNs)
- (c) Aides/Unlicensed Nursing Assistants
- (d) AGENCY NURSES Registered Nurses (RNs)
- (e) Licensed Vocational Nurses (LVNs)
- (f) Aides/Unlicensed Nursing Assistants

Please report any positions that are difficult to fill and explain the challenge in filling these positions.

Please provide the challenge in filling this position.

Please provide the job titles reported under "Registered Nurses-Other" position.

Section VIII: The following questions are intended to gather information on the operational impact of vacancies on hospitals. Please consult with the appropriate department managers or other qualified individuals in your organization prior to responding to these questions.

Section VIII.a: For each position, indicate the negative impact on patient care (i.e. services rendered by members of the health care community for the benefit of the patient) when a vacancy exists.

1- No impact; 2; 3; 4 – Moderately Negative Impact; 5; 6; 7 – Extremely Negative Impact

- (a) NURSING Registered Nurse - Staff (Not New Graduates) Direct Care
- (b) Registered Nurse – Other
- (c) RN-New Graduate (less than 6 months experience)
- (d) Certified Nursing Assistant
- (e) Home Health Aide
- (f) Licensed Vocational Nurse
- (g) Unlicensed Nursing Aide/Assistant
- (h) ALLIED HEALTH Coder
- (i) Clinical Laboratory Scientist
- (j) CT Technologist
- (k) CVIR Technologist
- (l) Medical Assistant

- (m) Medical Laboratory Technician
- (n) MRI Technologist
- (o) Occupational Therapy Assistant
- (p) Pharmacist
- (q) Physical Therapist
- (r) Physician Assistant
- (s) Radiological Technologist
- (t) Respiratory Therapist
- (u) Social Worker (LCSW)
- (v) Ultrasound Technician

Using the occupational list above...

Section VIII.b: For each position, indicate the impact on hospital efficiencies (i.e. avoiding waste, including waste of equipment, supplies, ideas and energy) when a vacancy exists.

1- No impact; 2; 3; 4 – Moderately Negative Impact; 5; 6; 7 – Extremely Negative Impact

Section VIII.c: How much has your hospital spent in the last 12 months on workforce development initiatives i.e. recruitment, candidate screening, on-the-job and pre-employment training, succession planning and talent development pipeline, etc.? Please provide the name and a description of the initiative and the \$ amount. In addition, please report the estimated in kind \$ value for each initiative, where applicable.

- Name & description of Initiative
- Amount \$
- In-kind estimated \$ value

Section VIII.d: In the past 12 months, have you limited services due to vacancies in these professions? If yes, please explain. Examples include sending out lab test due to lab personnel capacities, limiting special imaging services or surgeries, etc.

Yes or No

- (a) NURSING Registered Nurse - Staff (Not New Graduates) Direct Care
- (b) Registered Nurse – Other
- (c) RN-New Graduate (less than 6 months experience)
- (d) Certified Nursing Assistant
- (e) Home Health Aide
- (f) Licensed Vocational Nurse
- (g) Unlicensed Nursing Aide/Assistant
- (h) ALLIED HEALTH Coder

- (i) Clinical Laboratory Scientist
- (j) CT Technologist
- (k) CVIR Technologist
- (l) Medical Assistant
- (m) Medical Laboratory Technician
- (n) MRI Technologist
- (o) Occupational Therapy Assistant
- (p) Pharmacist
- (q) Physical Therapist
- (r) Physician Assistant
- (s) Radiological Technologist
- (t) Respiratory Therapist
- (u) Social Worker (LCSW)
- (v) Ultrasound Technician

Explanation

Using the occupational list above...

Section VIII.e: For each of the following, please indicate how concerned you are regarding its impact on your hospital's workforce supply?

1 – No Concern; 2; 3; 4 – Moderately Concerned; 5; 6; 7 – Extremely Concerned

- (a) Aging health care workforce within hospital
- (b) Population growth in region
- (c) Population aging in region
- (d) Cultural diversity and linguistic capabilities
- (e) Impact of health reform
- (f) Impact of CA state budget cuts on health care professional education
- (g) Leave of absences
- (h) Disability accommodations and/or physical limitations due to aging workforce

Section VIII.f: Please indicate the number of employees in the following occupations who fall within the stated age brackets.

- 25-35
- 36-45
- 46-55

- 56-65
- Over 65
- (a) NURSING Registered Nurse - Staff (Not New Graduates) Direct Care
- (b) Registered Nurse – Other
- (c) RN-New Graduate (less than 6 months experience)
- (d) Certified Nursing Assistant
- (e) Home Health Aide
- (f) Licensed Vocational Nurse
- (g) Unlicensed Nursing Aide/Assistant
- (h) ALLIED HEALTH Coder
- (i) Clinical Laboratory Scientist
- (j) CT Technologist
- (k) CVIR Technologist
- (l) Medical Assistant
- (m) Medical Laboratory Technician
- (n) MRI Technologist
- (o) Occupational Therapy Assistant
- (p) Pharmacist
- (q) Physical Therapist
- (r) Physician Assistant
- (s) Radiological Technologist
- (t) Respiratory Therapist
- (u) Social Worker (LCSW)
- (v) Ultrasound Technician

Section VIII.g: How difficult is it to find qualified applicants for the following occupations?

- (a) Certified Nursing Assistant
- (b) Clinical Laboratory Assistant
- (c) Coder
- (d) Licensed Vocational Nurse
- (e) Medical Assistant
- (f) Medical Laboratory Technician
- (g) Radiological Technologist

- (h) Ultrasound Technologist

Section VIII.h: Does your organization provide professional development (such as in-house or sponsored training) to employees for the following occupations?

Yes; No; Don't Know/Not Applicable

- (a) Certified Nursing Assistant
- (b) Clinical Laboratory Assistant
- (c) CT Technologist
- (d) Licensed Vocational Nurse
- (e) Mammography Technologist
- (f) Medical Assistant
- (g) Medical Laboratory Technician
- (h) Radiological Technologist
- (i) Ultrasound Technologist

If Yes, what topics of training are provided?

Additional Comments/Suggestions:

Centers of Excellence (COE) Health Care Survey

Firm specific

Q1. Please tell me how many workers your organization employs, at your location.*

Q2. Please tell me if your organization employs individuals in positions matching the following general occupational titles, at your location.*

Occupational List (Read brief definition of occupation only if needed by respondent)

- | | |
|---|--|
| 1. Certified Nursing Assistants (CNA) | 7. Coders (CDR) |
| 2. Home Health Aides (HHA) | 8. Medical Laboratory Technician (MLT) |
| 3. Licensed Vocational Nurses (LVN) | 9. Occupational Therapy Assistants (OTA) |
| 4. Medical Assistants (MA) | 10. Physician Assistants (PA) |
| 5. Registered Nurses (RN) | 11. Respiratory Therapist (RT) |
| 6. Clinical Laboratory Scientists (CLS) | 12. Social Worker (SW) |

Occupational employment

Q3. Please Indicate how many [Job Title] you have at your location [current employment]* **(full and part time)**

Q4. Please indicate how many [Job Title] positions were vacated due to retirement or other separation in 2013 [Replacements]

Q5. Thinking about the current number of [Job Title] you have, how many of these employees filled newly created opening/position in calendar year 2013 [Recent Growth]



Q6. For [Job Title], 12 months from now do you estimate you will have (1) the same amount of people employed; (2) more people employed; or (3) less people employed for each occupation? [Projected Growth]

Q7. For this occupation, I'm interested in the level of difficulty your organization has in finding entry-level applicants who meet the organization's hiring standards. Please indicate the level of difficulty your organization has in finding entry-level [Job Title] applicants who meet the organization's hiring standards.

Q8. Does your organization provide professional development (such as in-house or sponsored training) to [Job title]? If yes, please tell us what topics of type of training are provided.

Q9. For [Job Title], what topics do you feel the Community Colleges in your area should either improve upon, develop and/or offer? [open-ended]

Occupation specific

Q10A. Coder specific

Please Indicate how many employees you have for:

- | | |
|---|----------------------------------|
| Noncertified Coder | Medical Records Clerk/Technician |
| Certified Coder | Health Information Technician |
| Medical Biller/Medical Billing Specialist | Other (please elaborate) |

Q10B. CNA, LVN and RN specific

You currently have _# of CNA, LVN or RNs on staff; of these, how many are ...

- Traveling
- Contract/Agency

Q10C. RN specific

You currently have _# of RNs on staff; of these, how many are ...

- Experienced RNs-More than 6 months of staff nursing are employed at your location
- New Graduate RNs-Less than 6 months of staff nursing are employed at your location

Q10D. RN BSN v. ADN

Next, we'd like to ask you about RN educational preferences. When hiring registered Nurses in the future, is your organization more likely to hire a nurse with a bachelor's degree or an associate's degree?

- Bachelor's of Science in Nursing (BSN)
- Associate Degree in Nursing (ADN)

Q10E. RN Administrative vs. Clinical

Next, we'd like to ask you about RN duties. You currently have _# of RNs on staff; of these, approximately what % of your RNs conduct primarily clinical work? Approximately what % of those that conduct primarily administrative work? [May need to qualify that we're looking for majority of time spent or internal classification - all jobs likely have some admin duties, etc.]

- ___% Clinical work
- ___% Administrative work

Q10F: RN New Hires

When hiring RNs in your organization, are the RN duties more likely to be...?

- Administrative only
- Clinical only
- Both - more Administrative than Clinical
- Both - more Clinical than Administrative
- Neither
- Not Applicable

Q10G. CLS and MLT specific

You indicated you employ __ CLS' and/or __ MLTs. Thinking about those Clinical Laboratory scientists that staff your lab, do you also employ unlicensed laboratory assistants/aides?

Q10H. CLS and MLT specific

Next, we'd like to ask you about CLS' or MLT's. Since Medical Laboratory Technician (MLT) licensure became law in 2008, and licenses issued since 2010, has your organization increased the number of positions for MLTs?

- Yes, we have done this already
- No, we have not done this but plan to do so in the future
- No, we have not done this and do not plan to do so in the future

Q10I. Coder specific

Next, we'd like to ask you about CODERS. Please select the certifications that your organization accepts to work as a coder [Select all that apply.]

- AHIMA Certified Coding Associate (CCA)
- AHIMA Certified Coding Specialist (CCS)
- AHIMA Certified Coding Specialist – Physician-based (CCS-P)
- AHIMA Registered Health Information Technician (RHIT) or Administrator (RHIA)
- Other Certification, Not Listed [prompt for detail]
- No certification required

Q10J. Coder specific

On October 1, 2014 the new ICD-10 will become effective; the ICD-10 is a new system for coding that will expand the current system from 17,000 codes to about 140,000 codes. Please indicate if any of the following are actions your organization will take or is taking to prepare for ICD-10

- On-site training of new and existing coding staff by in-house instructor
- On-site training of new and existing coding staff by vendor/contract instructor
- Off-site training of new and existing coding staff by vendor/contract instructor
- Other action not listed [prompt for detail]
- No action

Q10K. Home Health Aides specific

Next, we'd like to ask you about HOME HEALTH AIDES. Which of the following are requirements to employment as a HOME HEALTH AIDE in your organization? (Select all that apply.)

- Has a High school diploma or GED
- Has a valid CA Driver License
- Is currently certified as a Nursing Assistant (CNA)
- Is currently certified as a Home Health Aide through state-approved program
- Other not listed [prompt for detail]

Q10L. LVN specific

Next, we'd like to ask you about the future of LVNs in the workplace. Nurse roles at all levels are being impacted by ACA (Affordable Care Act), advancing technology, and more. How could you see this affecting the work of LVNs in your organization? [OPEN-ENDED]

Q10M. Medical Assistants specific

Next, we'd like to ask you about MEDICAL ASSISTANTS. In hiring new MAs or in supporting Certification to existing MA staff, which of the following certifications are preferred by your organization?

- Certified Medical Assistant (CMA) by American Association of Medical Assistants (AAMA)
- Registered Medical Assistant (RMA) by American Medical Technologists (AMT)
- California Certified Medical Assistant (CCMA) by California Certifying Board of Medical Assistants (CCBMA)
- Other not listed [prompt for detail]7]

Q10N. Medical Assistants specific

Is your organization implementing changes to job duties and responsibilities for MEDICAL ASSISTANTS in response to the Affordable Care Act (ACA) and the emphasis of a an enhanced role for MAs? Yes/No/DK-NA

Q10O. Physician Assistants specific

Next, we'd like to ask you about PHYSICIAN ASSISTANTS in the workplace. Patient care roles at all levels are being impacted by ACA (Affordable Care Act), advancing technology, and more. How could you see this affecting the work of PAs in your organization? [OPEN-ENDED]

Wrap Up

Q11. Are there other occupations we have not talked about today that your organization is having difficulty hiring for? [Y/N. If Yes, prompt for detail]

Q12. Are you interested in receiving future information from the community colleges, including the findings of this research? [Y/N]

Q12. Are you interested in being contacted by your local community college regarding any of the following?

- A. Providing clinical experience/internship for students
- B. Providing internships for faculty professional development
- C. Partnering with a program to provide a clinical training site for Health care programs (for a class?)
- D. Providing input/advice on community college health care program curriculum
- E. Participating in career or job fair activities

Acknowledgements

This report is the product of a regional collaboration in San Diego County. The San Diego Workforce Partnership (SDWP) commissioned, edited and designed the report.

SDWP would like to thank everyone who contributed to this project:

- Zhenya Lindstrom – California Community Colleges Center of Excellence for Labor Market Research, San Diego-Imperial Region
- Scott MacKay and Mary Lou Mendro – Probe Research, Inc.
- Tina Ngo and Kelley Ring – San Diego Workforce Partnership
- Mary Wylie – California Community Colleges San Diego/Imperial Counties Regional Consortium
- Ann Durham and Linda Zorn – Health Workforce Initiative
- Andrea Yoder Clark and Marco Castillo – YourBecause.is and anacommedia
- The 200+ San Diego-based employers who participated in the surveys, interviews and focus groups for this report. This study could not have been produced without their participation.

Funded by the U.S. Department of Labor through the San Diego Workforce Partnership



W / doingwhatmatters.cccco.edu



W / ca-hwi.org



W / myworkforceconnection.org



W / coecc.net

**SAN DIEGO
WORKFORCE
PARTNERSHIP®**
*A proud partner of America's
Job Center of California™ Network*

3910 University Ave., Suite 400
San Diego, CA 92105
P / 619.228.2900 W / workforce.org

 [sdworkforce](https://www.facebook.com/sdworkforce)  [@SDWorkforce](https://twitter.com/SDWorkforce)