Health Careers in Orange County:
New Insights and Recommendations to Prepare for the Jobs of Tomorrow

September 2018

OC STEM INITIATIVE

About the OC STEM Initiative

OC STEM exists to foster Orange County's economic competitiveness and sustainability through promoting STEM competencies across the educational continuum through the creation of effective partnerships between community stakeholders, including but not limited to families, education, business, government and philanthropy. We envision a world where all students possess the requisite STEM skills to be competitive for 21st century jobs in Orange County, all educators and teachers are provided the tools and support to ensure their students are STEM competent and STEM literate, and Orange County is a leader in STEM workforce competitiveness in California and the United States.

Key organizational objectives include:

- Fostering Orange County's economic competitiveness and sustainability;
- Creating effective partnerships between community stakeholders, including but not limited to families, education, businesses, government, and philanthropic, organizations;
- Promoting STEM competencies across the educational continuum in Orange County from Pre-K through college;
- Preparing our children and future workforce to meet the dynamic requirements of a rapidly changing world; and
- Producing college- and career-ready graduates who possess critical thinking skills and creativity that enable them to make productive choices in work and life.

About Resilient Futures LLC

Resilient Futures LLC is an independent consulting practice helping transform the way we live, work, and learn. Using community-engaged research and evaluation, our projects empower leaders with the insights, partners, and strategies needed to achieve organizational goals and improve outcomes. We function at the intersections of health, human services, education, and employment to transform research into impact for a more equitable future.

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- St. Joseph Hospital; and
- University of California, Irvine Hospital.

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I. Introduction

Health care is an integral part of the United States economy. This broad, interdisciplinary sector encompasses many types and sizes of employers, with a multi-disciplinary workforce that possesses diverse and highly-specified skills. It was one of the few industries to continue growing through the Great Recession, and in the first quarter of 2018 overtook manufacturing and retail for the first time to become the largest source of jobs.[i] Projections from the Bureau of Labor Statistics show that health care will account for a large proportion of new jobs in the next decade,[ii] making health care both the largest and fastest-growing labor market sector in the United States.

In line with national trends, the **health care industry has also been a key driver of the Orange County economy**.[iii] Local demographic indicators point to the continued importance of this industry, both as an engine of job creation and an integral service for residents. Orange County is:[iv]

- **Diverse**: Orange County is a minority-majority region, with 60 percent of the population identifying as non-White;
- **Expensive**: only 21 percent of county households can afford to purchase a median-priced home, making Orange County the least affordable region in Southern California;
- **Inequitable**: educational outcomes, incomes, and other key outcomes vary widely within and across the county; and
- **Aging**: two in five county residents will be 55 years or older by 2060, an almost 20 percentage point increase from current levels.

Given the importance of health care to the local economy and the residents' well-being, there is **an urgent need for cooperation between key stakeholders** to ensure that Orange County remains competitive and meets the needs of its residents. This report supports this aim by providing new analysis of county-level education and workforce data that:

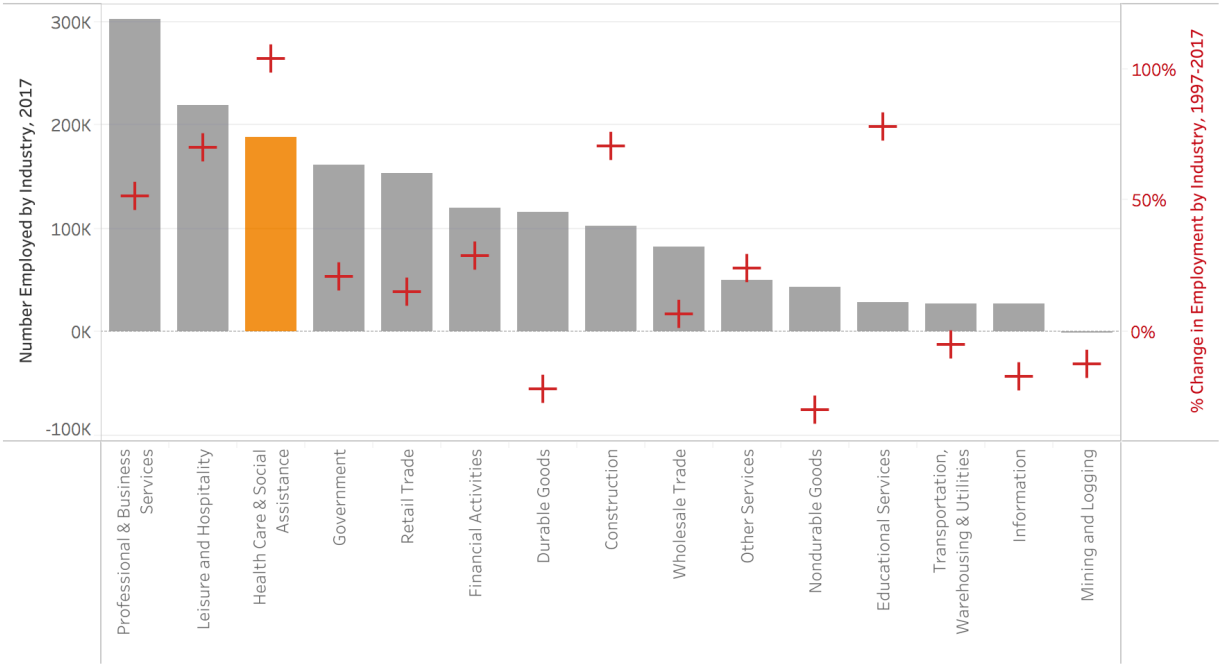
- Identifies growth areas within health care sector employment;
- Pinpoints specific high-growth health occupations and wages for these professions;
- Highlights race/ethnicity and gender equity gaps across health occupations;
- Identifies patterns in education and training requirements for high-growth professions.

Implications will focus on recommending priorities for cross-sector collaboration by policymakers, employers, educators, and the current and future workforce. This type of collective action, based on insights from regionally-specific data, is required to maintain the economic competitiveness and sustainable employment promised by health careers in Orange County.

II. Health Care Plays a Crucial Role in the Local Economy

The health care industry is one of the largest employers in Orange County. The broader category of educational and health services – defined as a major industry category by the federal government – represents the third-largest industry in the region, behind professional services and hospitality (see Figure 1).[1] Importantly, the **number of people employed in this industry group has more than doubled (104%) over the past twenty years**, by far the largest increase of any industry. This trend has established the growing and sustained importance of health care to the local economy.

Figure 1: Employment in Major Industries, Orange County



Data sources: US Department of Labor Bureau of Labor Statistics, Current Employment Statistics; State of California Employment Development Department, Current Employment Statistics.

Detailed trends specific to health care provide insight on the role this industry plays in Orange County.[2] In January 2018, 145,700 individuals in the county were employed in ambulatory (outpatient) health care services, hospitals, and nursing and residential care facilities, representing **almost 10 percent of the region's labor force**. Notably, this industry group includes **many types and sizes of employers**, from hospitals and physician offices to residential mental health facilities and blood and organ banks, providing employment in a variety of settings for employees with transferrable skills. A detailed breakdown of health employers is included in Table 1.

[1] All employment data cited throughout the report are not seasonally adjusted.
[2] North American Industry Classification System (NAICS) codes for health care include a sub-category for social assistance, which includes services for the elderly, persons with disabilities, and children and youth services. However, this industry code also includes community housing, vocational rehabilitation, and child day care services that are substantially different from many health careers. For this reason, detailed industry projections throughout this report will exclude social assistance unless otherwise noted.

Table 1: Health Care Industry Employers

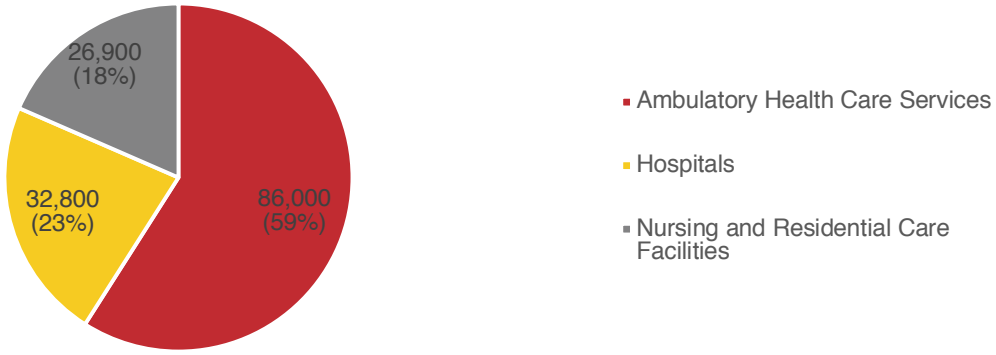
Ambulatory health care services	
Offices of physicians	HMO medical centers
Offices of physicians, except mental health	Kidney dialysis centers
Offices of mental health physicians	Freestanding emergency medical centers
Offices of dentists	Miscellaneous outpatient care centers
Offices of other health practitioners	Medical and diagnostic laboratories
Offices of chiropractors	Medical laboratories
Offices of optometrists	Diagnostic imaging centers
Offices of mental health practitioners	Home health care services
Offices of specialty therapists	Other ambulatory health care services
Offices of all other health practitioners	Ambulance services
Offices of podiatrists	All other ambulatory health care services
Offices of miscellaneous health practitioners	Blood and organ banks
Outpatient care centers	Miscellaneous ambulatory health care services
Outpatient mental health centers	
Outpatient care centers, except mental health	

Nursing and residential care facilities	Hospitals
Nursing care facilities	General medical and surgical hospitals
Residential mental health facilities	Psychiatric and substance abuse hospitals
Residential intellectual/developmental disability facilities	Other hospitals
Residential mental health/substance abuse facilities	
Community care facilities for the elderly	
Continuing care retirement communities	
Assisted living facilities for the elderly	
Other residential care facilities	

Data source: US Department of Labor, Bureau of Labor Statistics

As shown in Figure 2, ambulatory care represents the largest employer group, with almost two-thirds (59%) of the health care labor force employed in these settings. The remaining employees are fairly evenly split between hospitals (23%) and nursing and residential care facilities (18%).

Figure 2: Individuals Employed in Orange County Health Care Sector, by Employer Type, Orange County



Data source: State of California Employment Development Department, Current Employment Statistics. All data from January 2018.

Health care is also important for the local economy due to the competitive wages paid by employers in this sector. **Wages for individuals employed by hospitals and ambulatory health care were in line with or higher than the average hourly wage for the county** (see Table 2), crucial given the high cost of living in this region.

Table 2: Average Wages by Industry Type, Orange County

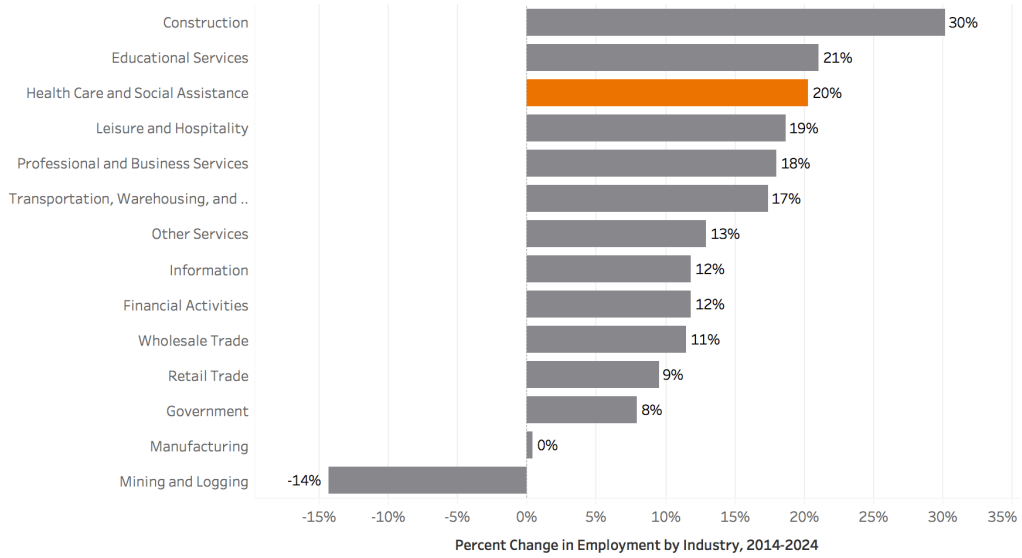
	Number of Establishments	Average Monthly Employment	Average Hourly Wage
Ambulatory Health Care Services	9,110	81,964	$29.61
Hospitals	145	37,577	$34.24
Nursing and Residential Care Facilities	753	25,762	$18.40
All Industries	116,116	1,572,953	$30.63

Data source: Adapted from State of California Employment Development Department, Quarterly Census of Employment and Wages. All data from Q1 2017. Calculations used average wages across federal, state, and local government and private employers.

It is important to note that this type of industry data classifies earnings by the employer type, not an individual employee's occupation. Thus, **health care employer data includes a wide range of occupations encompassing administrative, patient care, patient support, and information technology functions.** Therefore, many health-specific occupations will pay substantially above the average earnings across professional groups. (Occupation-specific data will be examined later in this report.)

Health care will continue to play an important role in Orange County's economy for the foreseeable future. **County health care and social assistance sectors are projected to increase by 20 percent between 2014 and 2024** (see Figure 3). Given that this sector employs twice as many workers as the construction sector and almost seven times as many workers as educational services, health care is a high impact growth sector for Orange County.

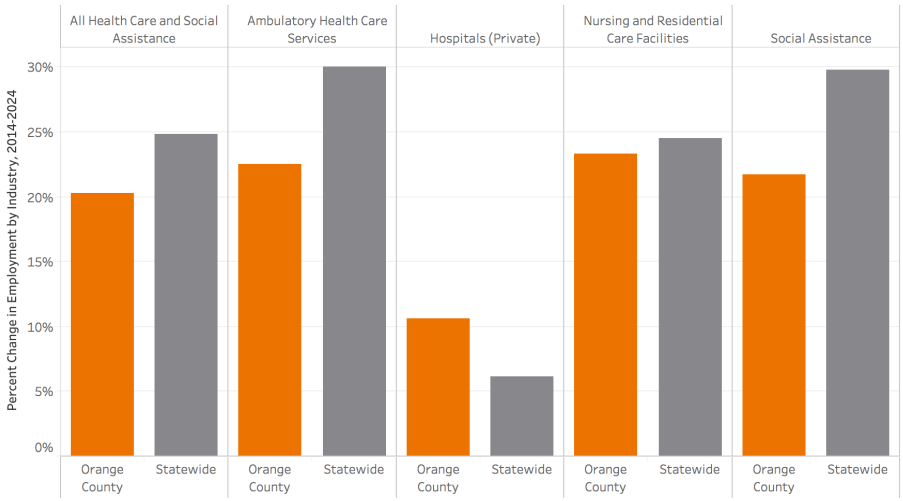
Figure 3: Projected Industry Employment 2014-2024, Orange County



Data source: State of California Employment Development Department, Industry Employment Projections.

Growth within the health care industry is projected to be highest within ambulatory care settings (22.6%) and nursing and residential care facilities (23.3%). This is substantially higher than the rate of growth expected across all industries in Orange County (14.2%) and statewide (15.1%). Notably, employment in hospitals is projected to grow at almost double the rate of this sector statewide, reflecting rapidly changing local demographics of the aging population.

Figure 4: Projected Health Care Industry Employment, 2014-2024



Data source: State of California Employment Development Department. Industry Employment Projections.

III. Health Professions Provide Opportunity for Workers

While the previous section discussed industry-wide trends, this section will provide information on growth and wages in specific health occupations to highlight opportunities for incumbent workers, learners, and industry partners. As shown in Table 3, **health occupations cover a wide range of disciplines, specialized skills, and direct patient care responsibilities.**

Table 3: Major Health Care Occupations

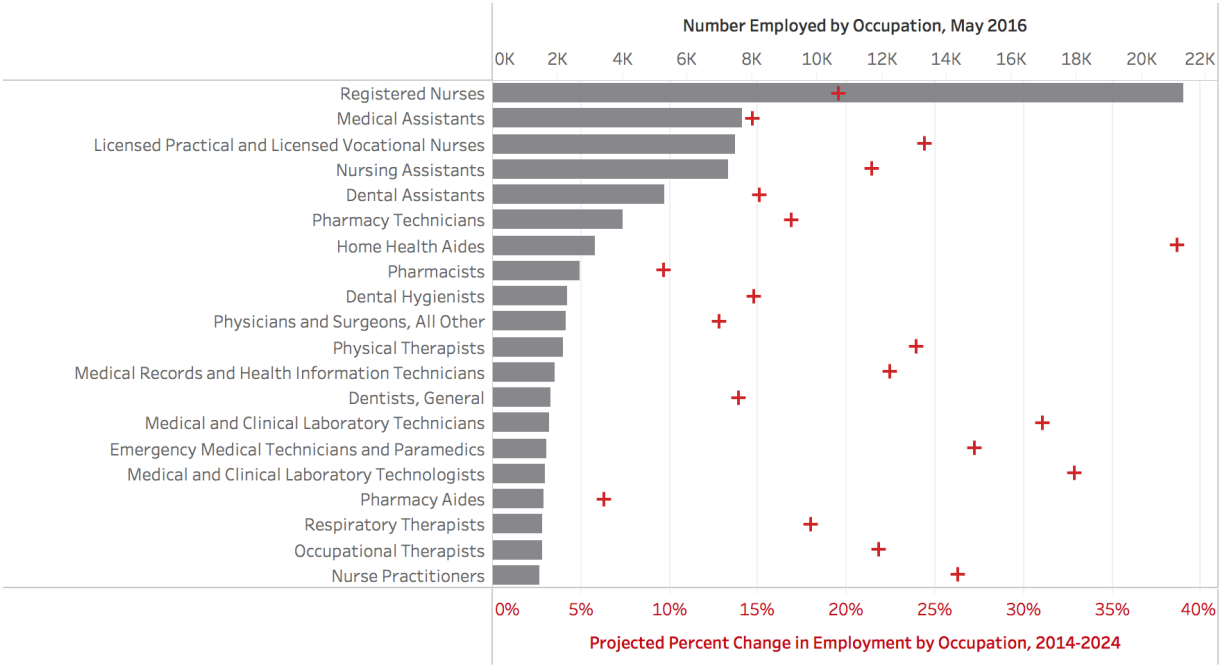
Healthcare Practitioners and Technical Occupations	
Health Diagnosing and Treating Practitioners	**Health Technologists/Technicians**
Chiropractors	Medical and Clinical Laboratory Technologists/Technicians
Dentists	Dental Hygienists
Dietitians and Nutritionists	Cardiovascular Technologists and Technicians
Optometrists	Diagnostic Medical Sonographers
Pharmacists	Nuclear Medicine Technologists
Physicians and Surgeons	Radiologic Technologists
Physician Assistants	Magnetic Resonance Imaging Technologists
Podiatrists	Emergency Medical Technicians and Paramedics
Occupational Therapists	
Physical Therapists	**Health Practitioner Support Technologists/Technicians**
Respiratory Therapists	Dietetic Technicians
Speech-Language Pathologists	Pharmacy Technicians
Therapists, All Other	Psychiatric Technicians
Veterinarians	Respiratory Therapy Technicians
Registered Nurses	Surgical Technologists
Nurse Anesthetists	Veterinary Technologists and Technicians
Nurse Midwives	Ophthalmic Medical Technicians
Nurse Practitioners	
Audiologists	**Opticians, Dispensing**
Licensed Practical/Licensed Vocational Nurses	**Other Healthcare Practitioners/Technical Occupations**
	Occupational Health and Safety Specialists
Medical Records/Health Information Technicians	Athletic Trainers
Healthcare Support Occupations	
Nursing, Psychiatric, and Home Health Aides	**Other Healthcare Support Occupations**
Home Health Aides	Massage Therapists
Psychiatric Aides	Dental Assistants
Nursing Assistants	Medical Assistants
Orderlies	Medical Equipment Preparers
	Medical Transcriptionists
Occupational Therapy/Physical Therapist Assistants and Aides	Pharmacy Aides
	Veterinary Assistants and Laboratory Animal Caretakers
	Phlebotomists

Adapted from US Department of Commerce, Bureau of Labor Statistics. "May 2017 Occupational Profiles." For more information about these occupations, see https://www.bls.gov/oes/current/oes_stru.htm#29-0000

In addition to the job categories highlighted above, **there are many other professions that are often employed in health care settings but are classified as community and social service occupations.** Some key examples include social workers, applied behavioral analysis therapists, mental health counselors, health educators, and substance abuse specialists. **These roles are part of the growth in health-related occupations**, but classification in federal and state data sources makes it difficult to understand how changes in these roles fit within the context of the health care sector. This has implications for future data collection efforts, and is a limitation that should be kept in mind when reviewing the occupational trends below.

The health professions with the largest numbers of employees are shown in Figure 5, along with the projected growth through 2024. Registered Nurses make up 20 percent of the total health care work force in Orange County, with an additional 20 percent growth projected over the next six years. Conversely, while home health aides make up only three percent of the health care workforce, this profession is projected to grow by almost 40 percent by 2024.

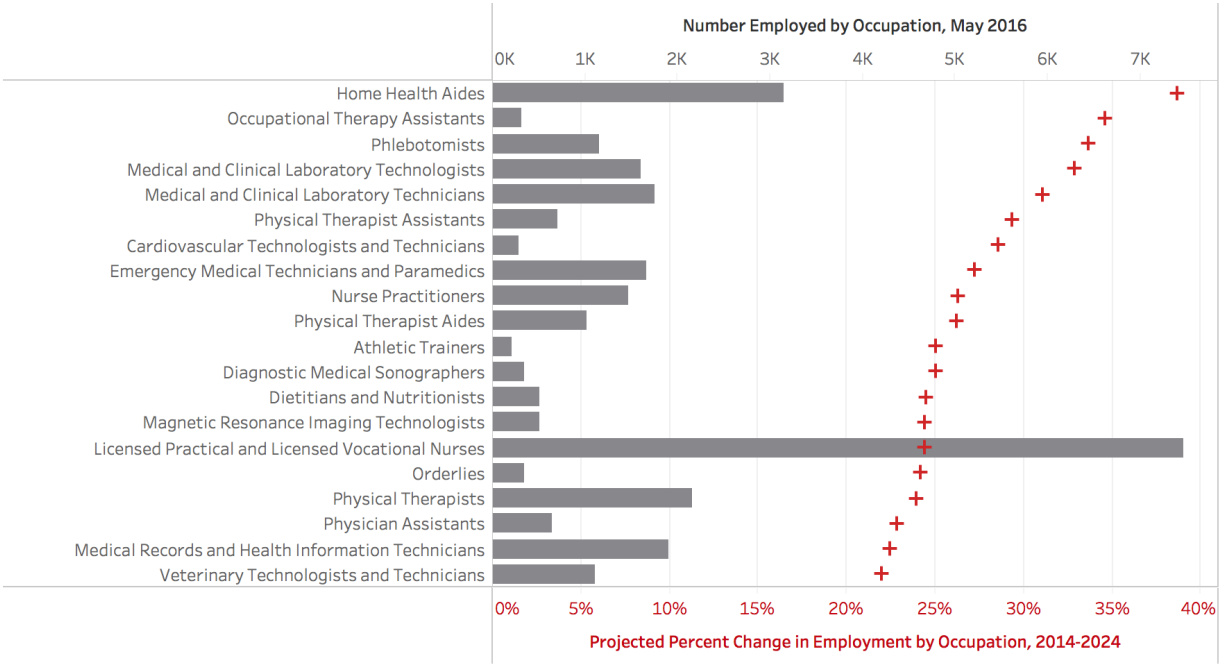
Figure 5: Largest Health Occupations and Projected Growth, Orange County



Data source: State of California Employment Development Department, Occupational Employment Statistics Survey and Quarterly Census of Employment and Wages; U.S. Bureau of Labor Statistics' Current Employment Statistics.

Along the same lines, **there are many emerging occupations that currently employ comparatively fewer workers but are projected to have substantial growth in the near future** (see Figure 6). This graphic points to priority areas for education and training for the next generation of workers. For example, while there are only 310 occupational therapy assistants currently employed in the county, this profession is expected to grow by 35 percent by 2024. Many professions that work at the bedside or behind the scenes to provide laboratory, imaging and other critical services needed to diagnose and treat patients are strongly represented in the in-demand fields. Phlebotomists, clinical laboratory technologists, and clinical laboratory technicians each are projected to grow by approximately one-third in the coming years.

Figure 6: High Growth Health Occupations, Orange County



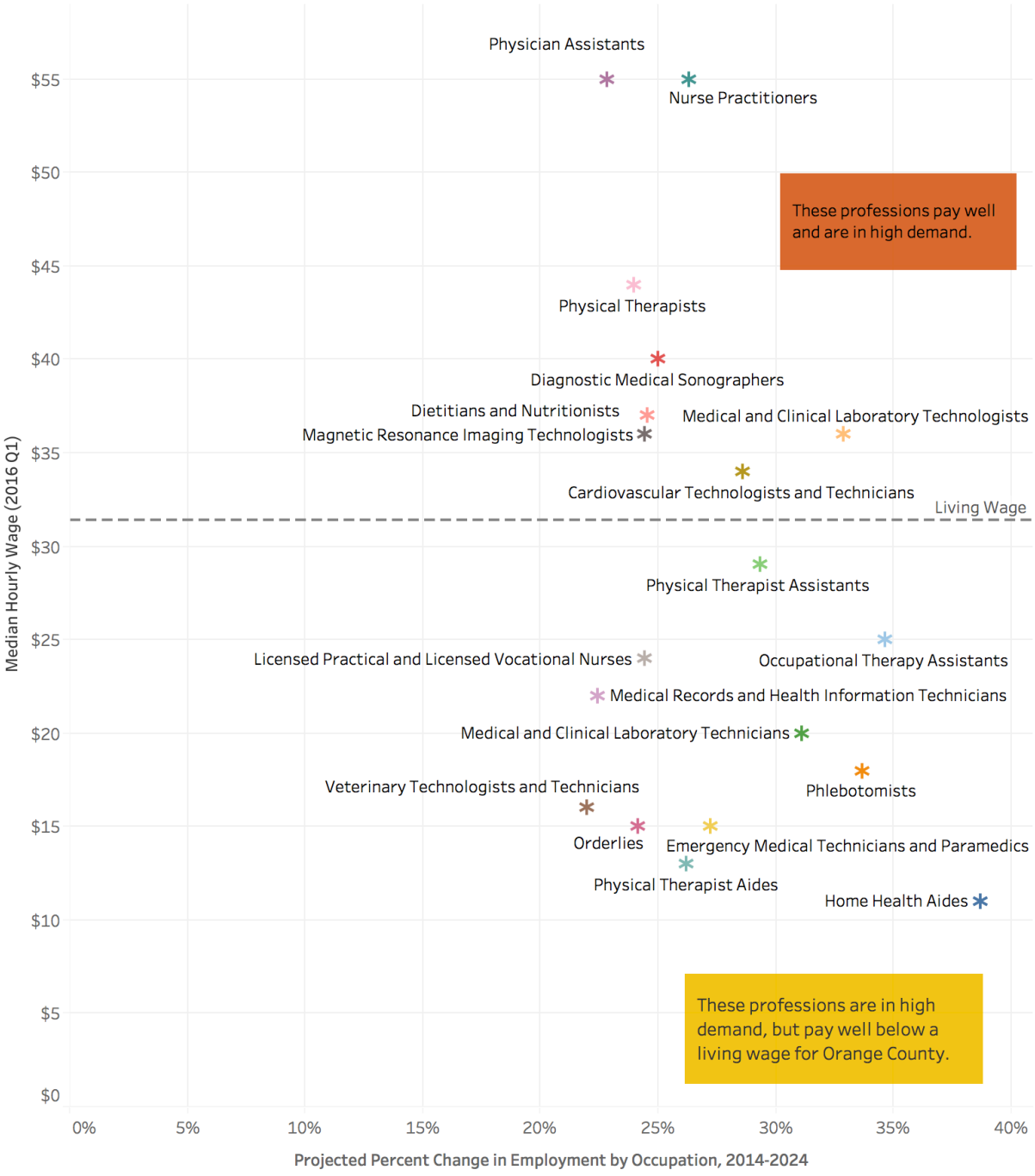
Data source: State of California Employment Development Department, Occupational Employment Statistics Survey and Quarterly Census of Employment and Wages; U.S. Bureau of Labor Statistics' Current Employment Statistics.

Another important dimension to consider is the connection between wages and demand for certain occupations. Figure 7 maps this relationship for the fastest-growing health professions in Orange County. **A key finding is that many of the fastest-growing health occupations pay well below living wage for the region.** For example, while home health aides are in the highest demand of all health professions, the median wage for this occupation is only one-third of the living wage for a family of four in Orange County.[3] In contrast, physician assistants and nurse practitioners pay well above the region's living wage and are projected to have strong growth in the near future.

Given the high cost of living in Orange County, **it is crucial that the current and future workforce is aware of opportunities in high-growth fields that pay a living wage**. However, the reality is that there is an economic imperative to fill the (low-wage) jobs that are currently in demand. At the same time, the incumbent workforce may lack the educational credentials needed to access higher-paying careers. As will be addressed later in this report, policy-makers, industry leaders, and educators should explore ways to **create career ladders and work-based learning opportunities that move workers from high-demand but low-wage fields into sustainable and well-paying careers** to achieve economic and equity goals.

[3] The living wage for Orange County was drawn from the Massachusetts Institute of Technology Living Wage Calculator (http://livingwage.mit.edu). The $31.41 figure assumes a family of four, with two adults (one working) and two children. Different family configurations result in substantial variation in the living wage for the same family size, from $19.83 per hour for a household with two working adults and two children to $48.06 per hour for a family with one adult and three children.

Figure 7: Median Hourly Wages for High-Growth Health Occupations, Orange County



Data source: State of California Employment Development Department, Occupational Employment Statistics Survey and Quarterly Census of Employment and Wages; U.S. Bureau of Labor Statistics' Current Employment Statistics; Massachusetts Institute of Technology Living Wage Calculator.

IV. Improving Equity in Health Professions is an Economic Imperative

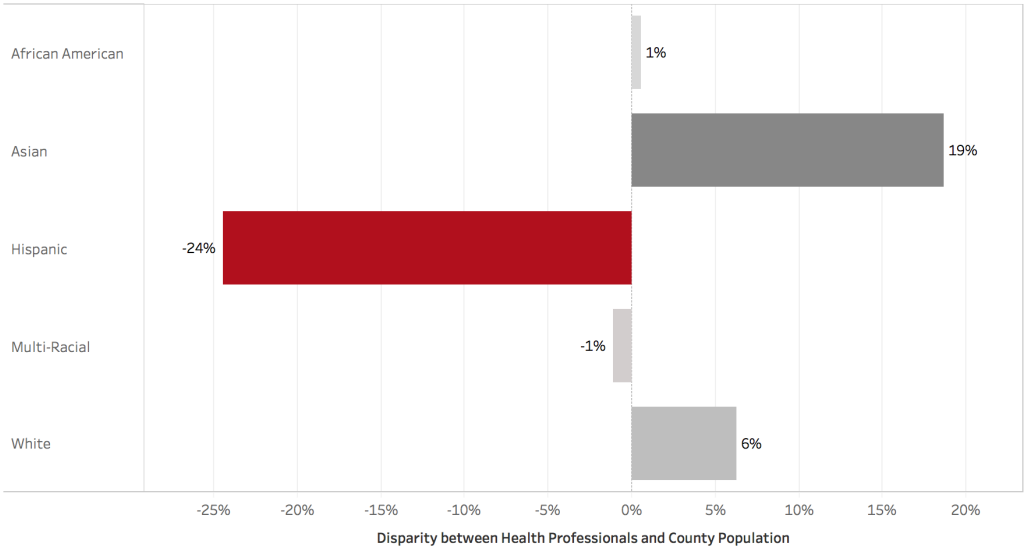
As noted in the introduction to this report, Orange County is a minority-majority region with projections suggesting that this trend will only accelerate in the coming decades. A continuing concern is the extent to which historically under-represented populations are able to access the opportunities provided by the growing health care field. **Disparities that begin in the educational pipeline result in a health profession that does not reflect the county population, by a wide margin** (see Table 4 and Figure 8). Workers who identify as Asian are in health occupations at almost 20 percentage points higher than this group's share of the general population. In contrast, Hispanic[4] health professionals are under-represented by almost 25 percentage points.

Table 4: Orange County Population, by Race/Ethnicity

	Total	Male	Female
All Races/Ethnicities	100.0%	49.5%	50.5%
African American	1.5%	0.8%	0.7%
American Indian/Alaska Native	0.2%	0.1%	0.1%
Asian	17.4%	8.3%	9.1%
Hispanic	32.8%	16.6%	16.2%
Multi-Racial	1.8%	0.9%	0.9%
Native Hawaiian/Other Pacific Islander	0.3%	0.2%	0.1%
White	45.5%	22.4%	23.1%

Data source: US Census Bureau, 2006-2010 American Community Survey.

Figure 8: Disparity between Race/Ethnicity of Health Professionals Compared to General Population, Orange County

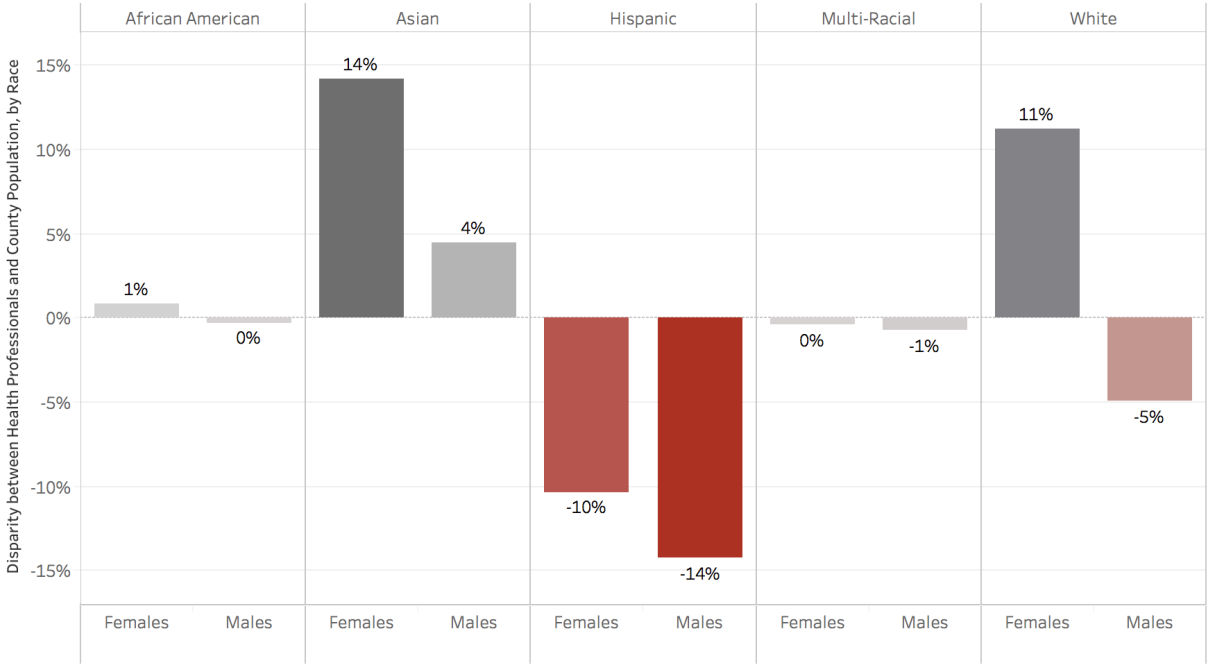


Data source: US Census Bureau, 2006-2010 American Community Survey.
Note: figure reflects racial/ethnic groups that make up at least 1 percent of the Orange County population.

[4] The term "Hispanic" has been used throughout this report to encompass individuals who identify as Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. This terminology reflects categories used by the US Census Bureau and the federal datasets used throughout this report. For more information, see https://www.census.gov/topics/population/hispanic-origin/about.html.

This high-level analysis masks the important interplay between gender and race within the health professions (see Figure 9). **The general trend of male under-representation in caring professions is borne out in the Orange County health sector.** For example, while White workers make up a larger proportion of the health care workforce than this group's share of the population, disaggregating by both race and gender reveals that White males are actually an under-represented group. Similarly, disparities for Hispanic health workers are most pronounced for males.

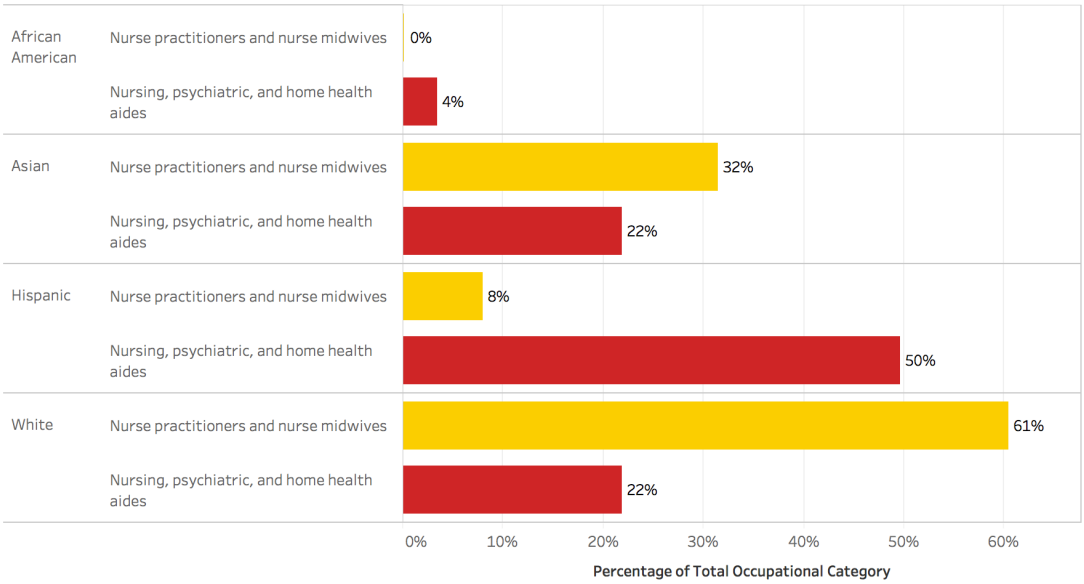
Figure 9: Disparity between Race/Ethnicity of Health Professionals Compared to the General Population, by Gender, Orange County



Data source: US Census Bureau, 2006-2010 American Community Survey.
Note: figure reflects racial/ethnic groups that make up at least 1 percent of the Orange County population.

A further concern regarding equity gaps is that **individuals who identify as Hispanic are over-represented in low-wage health professions**. Comparisons between the in-demand occupations of (high-wage) nurse practitioners and (low-wage) home health aides are provided as an illustrative case (see Figure 10). Hispanic workers make up half of all nursing, psychiatric, and home health aides, despite making up only 33 percent of the Orange County population. In contrast, more than 90 percent of nurse practitioners are White (61%) or Asian (32%).

Figure 10: Race/Ethnicity and Gender of Health Professionals by Occupation Type, Orange County



Data source: US Census Bureau, 2006-2010 American Community Survey.

Disparities across race/ethnicity and gender have important implications for labor market participation and economic competitiveness. Male-dominated construction and manufacturing industries experienced the biggest declines in employment during the 2007-2009 recession, at the same time that female-dominated education and health sectors experienced "recession-proof" growth.[v] At the same time, the health care industry requires a workforce that has the cultural competency and linguistic skills to serve an increasingly diverse consumer base. **Improving the representation of males and minorities across all segments of the health care sector will allow employers to address a shortage of skilled employees to support continued economic growth.**

V. Skilled Worker Shortages Require Improved Educational Pathways

An area of continued concern for all stakeholders is the extent to which the **workforce has enough new and existing workers with the skills required to meet demand for the growing health care industry**. Interviews were conducted with Orange County health care industry leaders to identify high-growth areas and in-demand skills, which encompass clusters of disciplines, job functions, and focus areas. Findings are highlighted in Table 5 below.

Table 5: Industry-Identified Growth Areas and Skills in Health Professions, Orange County

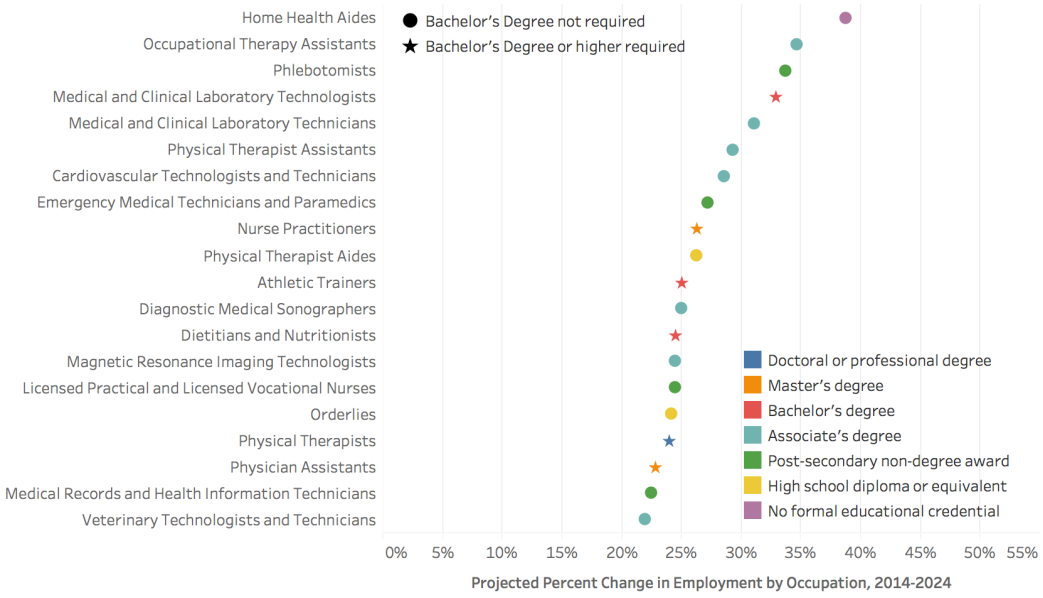
Top Growth Areas	Top Skills
Quality Improvement	Interpersonal Communication
Prevention/Wellness	Emotional Intelligence
Home Health Workers	Cultural Competence
Population Health	Empathy
Behavioral Health	Conflict Resolution
Technology with Clinical Background	
Billing/Coding	
Telemedicine	
Biomedical/Genetic	
Navigators and Case Management	

Data source: Interviews with health care leaders in Orange County conducted by the OC STEM Initiative.

The health care sector is subject to external forces that have strong effects on downstream activities such as education, training, and hiring. In just one example of this effect, health sector employers initially identified navigators and case managers as a high-growth area, but follow-up conversations have suggested that this forecast growth may not materialize due to policy changes at the national level.

These findings, in conjunction with the high-growth occupations identified previously in this report, provide insight on actions that must be taken to ensure the future workforce has the training, skills, and competencies needed to meet industry demand. For example, very few of the highest-demand professions require a Bachelor's degree or other advanced post-secondary credential at entry level (see Figure 11). Rather, **many of the fastest-growing fields may be accessed through an Associate degree or a post-secondary certificate**. Additional education and training may be required to advance on career ladders, but the absence of required credentials promotes improved access to initial employment within the health care field.

Figure 11: Entry-Level Education Requirements for High-Demand Health Professions

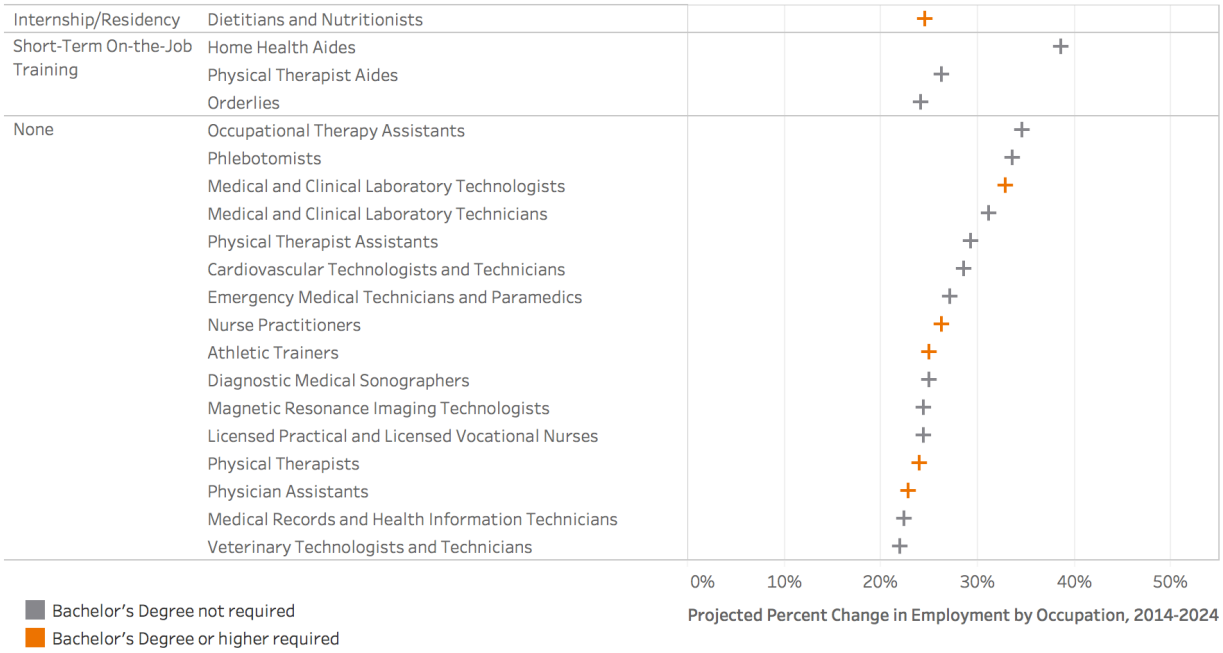


Data source: State of California Employment Development Department, Occupational Employment Statistics Survey and Quarterly Census of Employment and Wages; U.S. Bureau of Labor Statistics' Current Employment Statistics.

Importantly, only a few professions require workplace training in addition to the educational requirements discussed above (see Figure 12). This not only speeds the production of skilled workers, but may also encourage learners to pursue these occupations as they have comparatively low barriers to entry than those that have long-term internship or residency components. At the same time, exploring alternative or hybrid pathways that combine some post-secondary education with on-the-job training for those jobs that do not require a Bachelor's degree may address looming workforce shortages and open up pathways to health careers for historically under-represented groups.

Taken together, these findings highlight the importance of examining the education and training pathways to health careers. Previous research in California has identified that community colleges produce 40 percent of all health-related post-secondary awards.[vi] Given that the vast majority (70 percent) of the top 20 fastest-growing careers in Orange County do not require a four-year degree, there may be **a substantial mismatch between the educational credentials and focus areas of students and the skills and competencies sought by employers**. This disconnect results in a workforce that lacks the specific skills and expertise required by employers. It also has long-range implications for learners, who may be investing more time and money to acquire post-secondary credentials for which there is may be no easy path to employment.

Figure 12: Training Requirements for High-Demand Health Professions



Data source: State of California Employment Development Department, Occupational Employment Statistics Survey and Quarterly Census of Employment and Wages; U.S. Bureau of Labor Statistics' Current Employment Statistics.

VI. Implications and Recommendations

This report has highlighted **the immense promise of health care careers for Orange County**, **both for industry and the workforce of today and tomorrow.** One in ten workers is employed in a health care setting, with continued growth projected across all segments of this sector. The wide variety of occupations, employers, and work settings provides many opportunities for jobs, career advancement, and the development of transferable skills for the existing workforce. In addition, the fact that the strongest growth is occurring within occupations that represent a small proportion of the current employment pool bodes well for young workers about to embark on the workforce or those needing to change occupations due to labor market shifts.

At the same time, there are several pitfalls that must be addressed to realize the potential of health care within the region. Analyses of growing health professions in California have found that **educational institutions are struggling to meet both learner and industry demand.**[vii] Closer coordination within segments of the education sector (K-12, community college, university) can improve student achievement and transitions across the educational pipeline. This would have the added benefit of addressing a root cause of equity gaps in health careers, as students of color are disproportionately affected by poor educational transitions.[viii] Action by policymakers can address the acute lack of capacity in some post-secondary education programs, particularly nursing,[ix] and provide students with supports for pursuing education through scholarships and loan repayment programs.

Collaborations are also required to **ensure that programs of study in high-demand fields are responsive to the skills and competencies valued by employers**. Development of so-called "soft skills" should be fostered within the educational sphere and then recognized by employers through the use of competency-based hiring. This approach has already been adopted in some health care settings, with assessments of customer service orientation, critical thinking, communication, adaptability, results-focus, and leadership guiding recruitment and hiring.[x] The adoption of a micro-credentialing approach could also capture learner expertise in both technical and interpersonal domains, and are often able to respond more quickly to industry priorities than traditional educational credentials.[xi]

Another challenge that must be addressed is the extent to which **many of the jobs in highest demand do not pay anywhere close to a living wage for Orange County.** Industry leaders and educators should collaborate build career ladders that support progressions to jobs with sustainable wages.[xii] This may require increasing work-based learning opportunities,[xiii] expanding tuition reimbursement programs, or developing hybrid "earn and learn" pathways, as low-wage workers are often unable to overcome the financial challenges and opportunity costs leaving the workforce to acquire new credentials. Such an approach will also have the added benefit of engaging historically under-represented groups who may face myriad institutional and individual barriers to advancing through traditional educational pathways.

In tandem, policymakers must continue to **address the affordable housing crisis that will prevent a substantial portion of the health care workforce from working *and* working in Orange County**. An obvious concern is that employers struggle to attract and retain workers who are faced with the undesirable choice between high housing costs or long commutes, which has long-term implications for economic competitiveness.[xiv] However, housing costs have an array of repercussions that extend beyond education and workforce development. Long

commutes have a negative effect on the environment through greenhouse gas emissions, a substantial issue in aggregate given that more than 300,000 individuals commute from other counties to work in Orange County. For context, this figure represents more than 25 percent of the 1.2 million people who both live and work in Orange County.[xv] Increasing the proportion of individuals who live in the county would also have a positive effect on local revenue, as workers pay property taxes and support businesses near their homes.

Responses to grow and support Orange County's health care sector must include addressing equity gaps that jeopardize development of a workforce that meets industry demand. A great deal of attention has focused on the extent to which California struggles to produce diverse graduates in health and related fields. For example, this state ranks 48th and 49th in production of Hispanic and African American graduates with health degrees, respectively.[xvi] Addressing disparities in health professions is not only a matter of ensuring equitable participation by all Orange County residents in a growing economic sector. Research has demonstrated that historically under-represented workers have the cultural and linguistic competence needed to serve a rapidly diversifying population and are also more likely to work in underserved communities.[xvii] Reducing gender imbalances in this field may also have spillover effects for improving opportunities for men of color, who are profoundly underrepresented in health professions.[xviii]

Given the looming shortages of key health professionals, **ensuring that historically under-represented workers are able to access these careers is an economic imperative that will also affect the health and well-being of Orange County residents.** Current workforce pressures will be exacerbated as Orange County's population rapidly ages in place, with many of the highest-demand workers approaching retirement.[xix] Support for initiatives that address caregiver shortages and provider diversity, such as Area Health Education Center programs, can improve health care access and quality for underserved populations.[xx] In addition, work-based learning opportunities that improve academic achievement and promote career exposure in K-12, such as the FACES for the Future program, have shown promise for increasing the representation of diverse individuals in health fields.[xxi] More informal approaches that are no less important include development of careful messaging and outreach to educators, caregivers, and learners to increase awareness of the wide range of opportunities, earning potential, and career advancement offered by a career in health care.

Addressing each of these priority areas will require a collaborative response by stakeholders representing industry, education, and policy, as well as active engagement of the current and future workforce. At the same time, future research must continue to adopt a regionally-focused lens to ensure that the awareness of challenges and implementation of solutions reflects the local context. Data quality and classification must also evolve to reflect the community or social services occupations that have a strong presence in the health care field. The OC STEM Initiative is committed to using its platform to focus collective attention on these priority areas and stands ready to support all stakeholders to help realize the promise of health care for Orange County, now and in the future.

VII. References

[i] U.S. Department of Labor, Bureau of Labor Statistics, “All Employees: Education and Health Services: Health Care,” retrieved from FRED, Federal Reserve Bank of St. Louis https://fred.stlouisfed.org/

[ii] U.S. Department of Labor, Bureau of Labor Statistics, “Employment Projections 2016-2026.” https://www.bls.gov/news.release/pdf/ecopro.pdf

[iii] Orange County Business Council and Orange County Development Board, “Orange County Workforce Indicators Report, 2017-2018.” http://www.ocwib.org/civicax/filebank/blobdload.aspx?BlobID=70041

[iv] Ibid.

[v] US Department of Commerce, Bureau of Labor Statistics, “The Recession of 2007-2009.” https://www.bls.gov/spotlight/2012/recession/pdf/recession_bls_spotlight.pdf

[vi] Campaign for College Opportunity, “Needed: A Sy(STEM)ic Response – How California’s Public Colleges and Universities are Key to Strengthening the Science, Technology, Engineering, and Math (STEM) and Health Workforce,” 2016. http://collegecampaign.org/portfolio/june-2016-needed-systemic-response-californias-public-colleges-universities-key-strengthening-science-technology-engineering-math-stem-health-workforce/

[vii] Health Workforce Solutions and Campaign for College Opportunity, “Closing the Health Workforce Gap in California: The Education Imperative,” 2007. http://collegecampaign.org/wp-content/uploads/2014/06/2007_11_CCO_Closing_Health_Workforce_Gap_Exec_Summary.pdf

[viii] The Public Health Institute and UC Berkeley School of Public Health, “The Connecting the Dots Initiative: A Comprehensive Approach to Increase Health Professions Workforce Diversity in California. Inquiry 7: Increasing the Diversity of the Health Professions, K-12 Networks of Support,” 2008. http://www.phi.org/resources/?resource=increasing-the-diversity-of-the-health-professions-k-12-networks-of-support

[ix] Campaign for College Opportunity, “Needed: A Sy(STEM)ic Response.”

[x] Innovate+Educate, “Competency-Based Hiring: Shifting the Future of Tufts Medical Center,” 2017. http://innovate-educate.org/portfolio/tufts-mc/

[xi] Mathematica Policy Research, “Tiny but Magnified? The Role of Micro-Credentials in Dynamic Labor Markets,” 2017. https://www.mathematica-mpr.com/events/tiny-but-magnified-the-role-of-micro-credentials-in-dynamic-labor-markets

[xii] Office of Statewide Health Planning and Development and California Workforce Investment Board, “Health Workforce Development Council Career Pathway Sub-Committee – Final Report,” 2011. http://calswec.berkeley.edu/files/uploads/career_pathway_subcmte_reportfinal120711.pdf

[xiii] California Hospital Association, “Roadmap for Creating a Health Care Work-Based Learning Program,” 2015. https://www.calhospital.org/sites/main/files/file-attachments/final.cha_roadmapguide_v3.pdf

[xiv] Orange County Business Council and Orange County Development Board, “Orange County Workforce Indicators Report, 2017-2018.” http://www.ocwib.org/civicax/filebank/blobdload.aspx?BlobID=70041.

[xv] State of California Employment Development Department, “Orange – County to County Commuting Estimates.” http://www.labormarketinfo.edd.ca.gov/data/county-to-county-commute-patterns.html

[xvi] Campaign for College Opportunity, “Needed: A Sy(STEM)ic Response.”

[xvii] The Public Health Institute and UC Berkeley School of Public Health, “The Connecting the Dots Initiative.”

[xviii] Tim Bates, Susan Chapman, and Catherine Dower, “Men of Color in California’s Health Professions Education Programs,” 2010. https://healthforce.ucsf.edu/sites/healthforce.ucsf.edu/files/publication-pdf/2.%202010-10_Men_of_Color_in_Californias_Health_Education_Programs.pdf

[xix] California Workforce Investment Board Health Workforce Development Council, “Report on Health Workforce Development Needs: Findings and Recommendations,” 2013. https://calfutureworkforce.files.wordpress.com/2017/08/2013-chwdc-cwib-report-on-health-workforce-development-needs-findings-and-recommendations.pdf

[xx] California Workforce Investment Board Health Workforce Development Council, “Report on Health Workforce Development Needs: Findings and Recommendations.”

[xxi] The Public Health Institute and UC Berkeley School of Public Health, “The Connecting the Dots Initiative.”

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