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Allied Health Workforce Analysis San Diego Region

Timothy Bates, M.P.P.

Susan Chapman, Ph.D, R.N.



THE CENTER
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Executive Summary

Overview

Achieving a culturally competent health care workforce is a major focus area for The California Endowment. Part of any strategy to reach this goal should include the large number of health care workers often referred to as the “allied health workforce.” This group is comprised of professionals who provide a range of diagnostic, technical and therapeutic direct patient care services and support services. The field of allied health ranges from entry-level occupations requiring minimal educational investment to highly specialized occupations requiring advanced-degree training for entry into practice.

Objective and Approach

The objective of this series of regional reports is to describe and analyze the basic components of the allied health care workforce: the general population, which entails both an available pool of health care labor and the body of health care consumers, the current health professions workforce, and the graduates of selected allied health education programs. These reports also include information on current wage levels and projected occupational employment that can be used to evaluate the relationships among wages, employment opportunities, and characteristics of the workforce and population. This report is focused on The California Endowment-designated San Diego region, which includes Orange, San Diego and Imperial counties.

Nearly 20 allied health occupations were selected for a detailed analysis based on several criteria. First, workers in many of these occupations serve as the initial contact, and sometimes the only contact, in the health care system for poor, underserved or special needs communities. Second, many of these occupations represent a substantial number of job opportunities. They are fast-growing occupations, occupations whose workforce is large, thus producing many job opportunities due to sheer size, or occupations that have both of these characteristics. Finally, these occupations are characterized by a broad range of both educational requirements and practice settings. The spectrum of education levels ranges from workers with certificates from programs that can be completed in less than one year to those with master's-level training. Professional practice settings

include inpatient, outpatient, community and home. The following occupations are described and analyzed in this report:

- Dental Assistant
- Dental Hygienist
- Medical Assistant
- Pharmacy Technician
- Clinical Laboratory Scientist
- Home Health Aide
- Nursing Assistant
- Licensed Vocational Nurse
- Nurse Practitioner (Advanced Practice Registered Nurse)
- Physician Assistant
- Psychiatric Technician
- Mental Health Counselor
- Substance Abuse/Behavioral Disorder Counselor
- Mental Health/Substance Abuse Social Worker
- Geriatric Social Worker
- Public/Community Health Educator
- Medical/Public Health Social Worker
- Community Health Worker
- Health Care Interpreter

Principal Data Sources

Regional Population

Principal sources of data describing the region's current and projected population (during the period 2005-2030) are the California Department of Finance, Demographic Research Unit and the 2006 American Community Survey.

Current Health Professions Workforce

Data from the 2005 and 2006 American Community Survey, Public Use Microdata Sample (PUMS) for California were combined to broadly describe characteristics of the region's current health professions workforce.

... educational opportunities in Imperial County are limited. There are only three institutions of higher education, and they offer few health professions education programs.

Education

Excepting nurse practitioners, all education data are derived from the U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS). IPEDS is the most comprehensive source for postsecondary education data available. Nurse practitioner program data is from the 2005 California Board of Registered Nursing Annual Schools Survey.

Current and Projected Employment and Median Wages

2006 county-level estimates of total employment and hourly/annual wages and the county-level employment projections for the period 2004–2014 are from the California Employment Development Department (EDD).

Occupational Descriptions

Occupational titles are defined by the Standard Occupation Classification (SOC) system. Descriptions of each occupation and its respective scope of practice are from the 2006–2007 edition of the Occupational Outlook Handbook published by the Bureau of Labor Statistics.

Major Findings

The following section is organized so that findings from each major component of the report are grouped together. These include the region's current population, projected population, current health professions workforce; recent graduates of selected health professions education programs and projected occupational employment.

Current Population

Analysis of the region's current population reveals critical county-level differences, particularly with respect to Imperial County. For example, roughly 75% of Imperial County's population is Latino (twice the proportion in either Orange or San Diego County); and approximately one out of three Latinos in the county over the age of 25 reports speaking no English at all. The economy in Imperial County relies much more on agriculture than does either Orange or San Diego County, and Imperial County's geography is very sparsely populated (100 times less densely populated than Orange County).

The county's unemployment rate is also much higher than those in the rest of the region (in fact, it is the highest of any county in California), and the number of future job opportunities, whether in health care or in other professions, is expected to be low. In addition, educational opportunities in Imperial County are limited. There are only three institutions of higher education, and they offer few health professions education programs. These characteristics combine to present a unique set of policy issues. Addressing the health care needs of Imperial County's population through the development of the county's allied health care workforce will require careful consideration of all these factors.

In general, the San Diego region's Latino population is much younger than its other racial/ethnic groups. In 2006, the Latino median age was 26, four years younger

than that of any other racial/ethnic group, and Latina women (particularly those between the ages of 15 and 19) have comparatively high fertility rates. Across the region, an estimated one half of the Latino population age 25 and older reports speaking English either “not well” or “not at all.” Latinos have comparatively lower per capita incomes and are more likely to live at or below the federal poverty line. These economic characteristics correlate with low levels of general educational attainment. Latinos in the region are less likely to have earned a postsecondary degree than members of other racial/ethnic groups.

Other key findings describing the region’s current population include the following:

- One third of the nearly half million Asians living in Orange County are Vietnamese; this is the largest concentration of Vietnamese outside of Vietnam.
- More than 40% of the roughly 300,000 Asians living in San Diego County are Filipino.
- There is a rapidly growing foreign-born African-American population in San Diego County. In 2000, the proportion of the county’s African-American population identified as foreign-born was 6.1%, but by 2006, it had grown to 15.4%.
- Regional per capita income is highest in Orange County compared to the rest of the region and to California as a whole.

Projected Population

The region’s current population of just over 6 million people is projected to grow by roughly 1.6 million between 2005 and 2030.

In terms of the absolute size of projected population in the next 25 years, San Diego County ranks third largest and Orange County sixth largest among all counties in the state. An estimated 95% of the projected population increase of 1.6 million is expected to come from growth in the Latino (75%) and Asian (20%) populations.

As is true across California, the general population in the San Diego region is aging. Between 2005 and 2030, the regional population over the age of 65 is projected to grow by roughly 850,000; this is an increase of 128%. In relative terms, the growth will be most significant in Imperial County, followed by San Diego County and then Orange County. However, in all counties, the over-65 population is projected to more than double.

By racial/ethnic group:

- Latino population growth is expected to be strongest in Orange County; Latinos are projected to be the majority of the county’s population by 2030.
- White population growth over the next two decades is projected to be strong in San Diego County but is expected to decline in Orange County.
- Asian population growth will be strong in both Orange and San Diego counties.
- Strong population growth is projected for the region’s Native American, Native Hawaiian and multiracial populations.
- The size of the African-American population is projected to decline across the region.
- Almost all of the projected population growth in Imperial County is expected to be Latino.

An estimated 95% of the projected population increase of 1.6 million is expected to come from growth in the Latino population (75%) and Asian population (20%).



Current Health Professions Workforce

There are significant differences in the gender and racial/ethnic composition of the region's health professions workforce that correspond to differences in educational attainment and earnings. In each broad group of health care professions, racial/ethnic diversity decreases as the level of education attained increases. Because educational attainment correlates positively with earnings, by extension this finding suggests that racial/ethnic diversity correlates negatively with earnings.

The most substantial gaps in employee diversity in the health professions involve the Latino population. Latinos are significantly underrepresented in all but those occupations having the lowest educational barriers to entry. In other words, Latinos are best represented among health care occupations that

require little in terms of educational preparation and are at the bottom of the wage scale. By contrast, Asians represent just 13.9% of the region's labor force; however, among the most educated health care diagnosing/treating practitioners, health care technologists/technicians and health care support occupations, Asian proportional representation doubles in size.

Roughly 35% of the region's general labor force is foreign-born, and within the health care sector this proportion declines slightly, to approximately 31%. Asians represent well over half of the region's foreign-born health care workforce, and roughly 8 out of every 10 Asian health care workers in the regional sample examining the period 2005–2006 were foreign-born. Asian foreign-born health care workers are most highly represented in the broad occupational group Health care Diagnosing and Treating Practitioners, which generally comprises the most highly trained workers and highly paid occupations. By contrast, foreign-born Latinos represent just 26% of the region's foreign-born health care workforce, and approximately 4 out of 10 Latino health care workers in the regional sample over the period 2005–2006 were foreign-born. Latino foreign-born health care workers are most highly represented in the broad occupational group Health care Support Occupations, which generally consists of entry-level occupations requiring little formal training and that are at the bottom of the wage scale.

Recent Graduates of Health Professions Education Programs

The pattern of racial/ethnic diversity seen in the region's current health professions workforce is reflected in the data describing

recent graduates of the region's health professions education programs: The greatest amount of racial/ethnic student diversity is found in entry-level health education programs such as those for Dental Assistants and Medical Assistants. According to reported data, training for these entry-level occupations is concentrated in the region's private, for-profit institutions. For example, 75% of reported Dental Assistant graduates, 85% of reported Licensed Vocational Nursing graduates, more than 90% of reported Medical Assistant graduates, and more than 90% of reported Pharmacy Technician graduates are coming from the region's private, for-profit postsecondary educational institutions.

By racial/ethnic group:

- Latino students are well represented in the following education programs: Dental Assistant, Medical Assistant, and to a lesser extent, Substance Abuse/Addiction Counseling at the associate degree level.
- Latino students are underrepresented in the following programs: Licensed Vocational Nursing, Registered Nurse Practitioner, Public Health and Clinical or Counseling Psychology at both the master's and the doctoral levels.
- African-American students are well represented in the following programs: Substance Abuse/Addiction Counseling at the associate's degree level (although numbers of graduates have declined recently), Licensed Vocational Nursing, Psychiatric Technician and Counseling Psychology programs at the master's level (Marriage and Family Therapy programs).
- African-American students are underrepresented in the following programs: Dental Assistant, Dental Hygiene (not a single graduate reported in the last three years), Registered Nurse Practitioner, Clinical or Counseling Psychology at the doctoral level, master's level Social Work and Public Health.
- Native American students rarely represent more than 1% of the total number of graduates (for whom race/ethnicity is reported) in any of the selected health professions education programs. Among certain programs only a single graduate may be reported in a year, and sometimes there are no reported Native American graduates. These programs include Dental Hygiene, Public Health, master's level Social Work, Clinical and Counseling Psychology programs at both the master's and doctoral level and Psychiatric Technician.

Employment Opportunity

Employment opportunity correlates strongly with the absolute size of the workforce; the larger the workforce, in general, the greater the opportunity for employment. The same five or six occupations (all among the largest in terms of workforce size) are projected to offer the greatest opportunity for employment across the region over the coming decade: Registered Nursing, Licensed Vocational Nursing, Nursing Assistant, Medical Assistant, Dental Assistant and Home Health Aide. In terms of those occupations that are growing the fastest across the region, there is some variation by county: Nursing Assistant, Mental Health

Counselor, Mental Health Social Worker and Public Health Educator are projected to grow rapidly in San Diego County but not across the entire region. Physician Assistant, Medical Assistant, Dental Assistant and Home Health Aide are all fast-growing health care occupations across the region.¹

Summary of Major Findings

One of the key issues to emerge from this analysis of the San Diego region's population, health care workforce, and graduates of the region's selected health care education programs is that within the region Imperial County presents a special set of workforce issues. Several population and economic characteristics distinguish it from the rest of the region, including findings that roughly 75% of the population is Latino (twice the proportion in either Orange or San Diego counties) and that an estimated one in three Latinos over the age of 18 in the county does not speak any English.

Imperial County's economy relies much more on agriculture than do the economies of either Orange or San Diego counties and it is very sparsely populated. The unemployment rate in Imperial County is much higher than it is in the rest of the region (in fact, it is the highest of any county in California), and the number of future job opportunities, whether in health care or in other fields, is expected to be low. In addition, educational opportunities in Imperial County are limited. There are only

three institutions of higher education in the county, and there are very few educational programs in health professions. These characteristics combine to present a unique set of policy issues. Addressing the health care needs of Imperial County's population through the development of the county's allied health care workforce will require careful consideration of all these factors.

Another main set of issues that emerge from this analysis concerns the conditions of the Latino population. The region's Latino population is young, comparatively income-poor, and comparatively less well-educated than other populations; fertility rates of young Latina women are much higher than those of other young women; and across the region an estimated one half of the Latino population speaks English either "not well" or "not at all." These are all important factors to consider as part of any effort to address the region's health care needs and to develop its allied health care workforce.

Latino health care workers are concentrated in that segment of the health care workforce that consists of mainly low-paying, entry-level occupations. In the section of this report that looks at the demographic profile of the region's current health care workforce, for each broad occupational group, Latino representation increases as the level of education attained by the workforce decreases; in some cases, the increase is substantial. The educational attainment profile for the region's Latino health care workforce corroborates this finding. Only an estimated 29% of Latino health care workers in the region hold at least a bachelor's degree as compared with

¹ These findings are mainly corroborated by the report *Careers in San Diego's Health care Sector: A Healthy Future*, published by the San Diego Workforce Partnership. A key difference is that, according to the San Diego Workforce Partnership report, employment opportunities for Physician Assistants in San Diego County will grow much less rapidly over the coming decade than projections by the California Employment Development Department indicate. The report is available on the Web at http://www.sandiegoutwork.com/generate/html/LMI/health_care_sector_studies_06.html

African-American health care workers (38%), white health care workers (58%), and Asian health care workers (67%) holding that degree.

Data describing recent graduates of health professions education programs in the region also corroborate these findings. Latino students are most heavily represented in those training programs that lead to low-paying, entry-level health care positions. These are typically certificate programs that can be completed in less than one year and that may not lead to a credential. Many of these programs are offered by private, for-profit institutions; in fact, the education data indicate that 75% to 90% of reported graduates of entry-level health care training programs attended one of the region's private, for-profit institutions. This finding has implications for the cost of education and the roles and responsibilities of the region's community colleges and adult-education programs. Strategies to develop the region's allied health care workforce must address these facts. Useful policies and programs will focus on recruiting Latino students into health care occupations that involve greater educational investment and finding ways to move current Latino health care workers along established career ladders into higher-paying health care occupations.

This focus on the region's Latino population is not meant to obscure the conditions of the African American or Native American populations. Many of the circumstances affecting the Latino populations also apply to the region's African-American and Native American populations. African Americans and Native Americans in the region have lower per capita incomes and lower levels

of educational attainment, and they are much less represented in the region's health care workforce among occupations that require more advanced training and that pay comparatively well. Strategies designed to develop a more diverse allied health care workforce must also include strategies for recruiting African Americans and Native Americans into education programs and for directing them toward career ladders leading to occupations that involve more decision-making and greater responsibility and that generally pay better wages.

... 75% to 90% of reported graduates of entry-level health care training programs attended one of the region's private, for-profit institutions.

African Americans and Native Americans...are much less represented in the region's health care workforce among occupations that require more advanced training and that pay comparatively well.



Objective and Approach

Achieving a culturally competent health care workforce is a major focus area for The California Endowment. Part of any strategy to reach this goal should include the large number of health care workers often referred to as the “allied health workforce.” This group is comprised of professionals who provide a range of diagnostic, technical and therapeutic direct patient care services as well as support services. The field of allied health ranges from entry-level occupations requiring minimal educational investment to highly specialized occupations requiring advanced-degree training for entry into practice.

The current report is one in a series of reports focused on each of The California Endowment’s programmatic regions and presents analysis of three principal groups in The California Endowment San Diego region (San Diego, Orange and Imperial counties): the general population, the current health professions workforce and the graduates of

nearly 20 selected allied health education programs. These occupations were selected based on several criteria, including the fact that workers in these occupations often serve as the initial contact, and sometimes as the only contact, in the health care system for poor, underserved, or special needs communities. Many of these occupations are projected to offer substantial job opportunity. They are either fast-growing occupations or occupations with such a large workforce that even though relative growth may be slow, job openings will be numerous, or they are occupations with both of these characteristics. These occupations also present job opportunities with a broad spectrum of education requirements for entry into practice, ranging from certificates requiring less than one year to complete to master’s-level training.

The report begins with an examination of the demographic and economic characteristics of the current and projected population in the San Diego region, which serves as context. This is followed by a brief section that broadly describes certain demographic characteristics of the region’s current health professions workforce. The remainder of the report is a description and analysis of labor market and education data for nearly 20 selected occupations and education programs, which can all be considered representative of the allied health workforce. They include occupations in health care support, in community and social services, and programs for health care practitioners and health care technologists.

Table 1 displays the list of selected occupations and the most common level of educational attainment required for entry into practice.

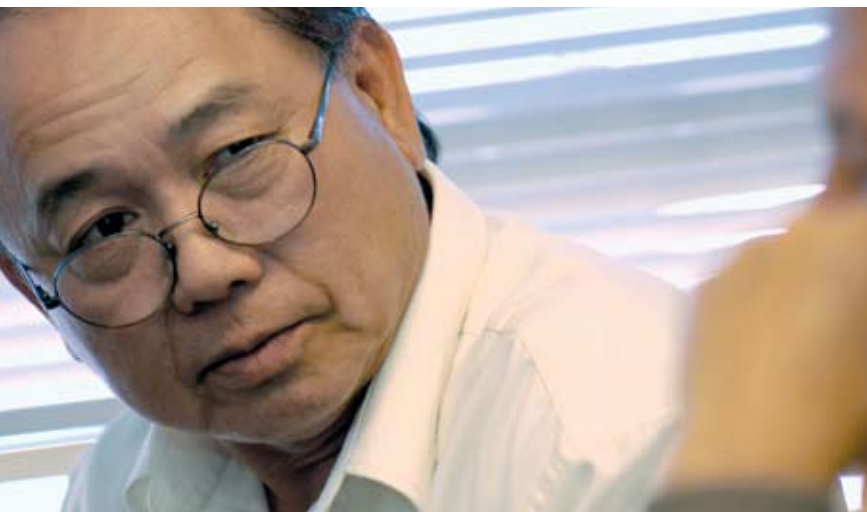


Table 1.
Occupational Title and Common Educational Attainment

Occupation	Common Educational Attainment
Dental Assistant	Certificate (1-2 years)
Dental Hygienist	Associate's Degree
Medical Assistant	Certificate (1-2 years)
Pharmacy Technician	Certificate (1-2 years)
Clinical Laboratory Scientist	Post-Baccalaureate certificate
Home Health Aide	Certificate (<1 year)
Nursing Assistant	Certificate (<1year)
Licensed Vocational Nurse	Certificate (1-2 years)
Nurse Practitioner (Registered Nurse)	Master's Degree
Physician Assistant	Certificate (2 years)/Associate's/Master's Degree (depending on previous education and experience)
Psychiatric Technician	Certificate (1-2 years)/Associate's Degree
Mental Health Counselor	Master's/Doctoral Degree
Mental Health Social Worker	Master's Degree
Substance Abuse/ Behavioral Disorder Counselor	Certificate (2 years)/Associate's/Bachelor's/ Master's Degree
Medical/Public Health Social Worker	Master's Degree
Geriatric Social Worker	Bachelor's/Master's Degree
Public/Community Health Educator	Bachelor's/Master's/Doctoral Degree
Community Health Worker	Certificate/On-the-job training
Health Care Interpreter	Certificate/On-the-job training

Data Limitations

Data sources used to describe the various components in this report are generally the best publicly available data. However, each has limitations that impact the level of analysis that can be conducted. Because this analysis is focused on a sub-state geographic region, we were not able to estimate characteristics of the current workforce at the level of individual occupations. The number of sample observations available in the American Community Survey for the selected occupations is too small to produce estimates at that level of detail.

As a result, occupations needed to be aggregated into larger groups; consequently, only broad descriptions were possible.

Second, in some cases there is only a general relationship between employment data and education program data. Occupational employment data describe those working in a specific occupation while educational institutions report the number of graduates trained to work in a field but not necessarily at a particular job. In this case, when employment and education data do not directly correspond, we report education



data describing programs that are generally associated with the occupation of interest, i.e., those programs that are likely to provide useful training for that occupation. For example, data describing the employment conditions for Medical/Public Health Social Workers have no direct analogue in the education data. We can only report the profile for graduates of general public health or social work programs. Thus, one should be cautious when interpreting and using these data.

Third, because the data describing employment projections and education program graduates only generally correspond, they cannot be combined to precisely balance the number of jobs for allied health workers (demand) and the number of workers available (supply). For example, the number of reported graduates of Medical Assistant programs in a given year may exceed the projected number of annual job openings for Medical Assistants. However, this finding does not necessarily mean that there is a surplus of potential workers. These graduates

may choose to work at a related job or may find employment in another region.

Information on whether there is a surplus or a shortage of workers in a particular occupation is best obtained directly from employers who know the number of vacant positions in their organizations as well as how easy or difficult it is to fill open positions. Educators may also have a sense of how easy or difficult it is for their graduates to find employment after graduation. Some educators track the types of jobs and workplace settings in which their new graduates are employed.

Fourth, for several of the selected occupations, the educational institutions reporting program graduates data represent only a sample of all the training opportunities for that occupation. In such cases, the number of reported graduates in a given year is likely an underestimate of the total number of actual graduates. All education programs that reported data are listed in Appendices D1–D4.

Although these data are subject to limitations, there are nevertheless several practical uses for this report. Descriptions of the demographic composition of the current workforce, despite being overly general, illustrate the lack of racial and ethnic diversity among health care occupations that involve higher levels of education and pay higher wages. The data describing education program graduates indicate how different racial/ethnic groups are potentially distributed as new entrants into the workforce. Estimates of employment and wages describe the wide variation in both workforce size and amount of earnings

across allied health occupations. These estimates can be combined with demographic data describing the current workforce and education program graduates as well as with the employment projections data to highlight broad allied health workforce trends in the San Diego region. These findings may also be useful in guiding workforce planning and in identifying areas, populations and programs that could benefit from support in order to achieve the goal of a culturally competent workforce.

Employment Projections

There are two principal components of employment projections: (1) occupational growth (new jobs), driven largely by population growth and growth in those industries in which such occupations are concentrated, and (2) the need to replace workers (attrition) who leave their jobs for whatever reason (in most cases, a new job or retirement). For many occupations, job openings caused by the need to replace workers are more numerous than job openings due to occupational and industrial growth. In some cases, for occupations concentrated in declining industrial sectors, the need to replace workers is the only source of job openings.

There are also two principal ways to measure projected growth in employment: relative growth and absolute growth. Relative growth indicates how rapidly the occupation is growing. Absolute growth measures the total number of jobs. This is an important distinction. An occupation may be growing very rapidly, but if it has a small workforce, the number of new job openings will be

relatively few. Conversely, an occupation may be growing very slowly, but if it employs a sizable workforce, the number of new job openings may be very large.

For each selected occupation, we provide two rankings: a *fastest growth* ranking and a *most jobs* ranking. The *fastest growth* ranking measures only new job openings due to occupational growth, meaning that it does not factor in job openings due to replacement needs. The *most jobs* ranking takes into account both components of projected job openings: occupational growth and replacement needs. The rankings are expressed as a percentile and are measured against all of the other detailed occupations for which projections were made.

For example, if the *fastest growing* rank for Dental Hygienists for San Diego County indicates “Top 1%,” this classification means that job openings for Dental Hygienists are projected to grow more rapidly than job openings for 99% of all other occupations in San Diego County. The interpretation is the same for the *most jobs* ranking. If the most jobs rank column for Dental Hygienists in Orange County indicates “Bottom 25%,” this ranking means that the total number of job openings for Dental Hygienists are projected to number fewer than those for 75% of all the other occupations in Orange County.

Also included is the average number of job openings per year for each occupation, listed by county. This figure combines the projected number of job openings due to growth and the projected number of those due to the need to replace workers.

African Americans and Native Americans...are much less represented in the region's health care workforce among occupations that require more advanced training and that pay comparatively well.

Race/Ethnicity Categories

The racial/ethnic categories used in this report are defined for each data source and change depending on which source is being used. In general, the categories include white, African American, Asian, Native American, and Latino. Other race is used when the report presents data on the current workforce. This category includes American Indian, Native Alaskan, Native Hawaiian and multiracial, since the number of observations in the sample for each of these groups is too small to generate meaningful estimates. Filipinos are categorized differently depending upon the data source. In the Board of Registered Nursing survey data, Filipinos are reported in their own category; in all other data they are included in the Asian category. The category of Latino ethnicity includes people of any race who self-identify as either Hispanic or Latino.

In the section describing graduates of education programs, we identify only those students for whom race/ethnicity was reported. Students whose race/ethnicity was unknown or unreported were excluded from the analysis. We also excluded the small number of students who were reported as non-U.S. citizens. However, this caveat does not apply to descriptions of the gender composition of education program graduates; gender is fully identified in the data.

The elimination of student data when race/ethnicity was not identified means that in those figures describing the racial/ethnic composition of graduates of a specific education program, the

number of students being described is lower than the actual total number of graduating students because some proportion has been excluded. Thus, the proportions represented will always sum to 100% because they represent 100% of the students for whom race/ethnicity was reported. For most education programs, in most years, the proportion of graduates whose race/ethnicity is unknown is roughly 10%.

Table 2 summarizes the different racial and ethnic categories used by the different data sources.

Table 2.
Racial/Ethnic Categories by Data Source

Racial/Ethnic Categories by Data Source
<p>American Community Survey White, Asian, African American, Hispanic or Latino, Native American, Native Hawaiian, Other Pacific Islander, Multirace, Some other race</p>
<p>Integrated Postsecondary Education Data System (IPEDS)* White, Asian (includes Native Hawaiian/other Pacific Islander), African American, Native American/Alaskan, Hispanic or Latino</p>
<p>California Board of Registered Nursing Annual Schools Survey White, Asian non-Filipino (includes Native Hawaiian/other Pacific Islander), Filipino, African American, Native American, Hispanic or Latino</p>
<p>California Department of Finance White, African American, Hispanic or Latino, Asian, Native American, Native Hawaiian/Other Pacific Islander, Multirace</p>

* IPEDS includes the non-racial/ethnic reporting category of non-U.S. citizen.

San Diego Regional Overview

There are several population and economic characteristics that distinguish Imperial County from Orange and San Diego counties (the two other counties in The California Endowment's designated San Diego region). The population in Imperial County is comparatively much smaller than that of the other two counties; the size of the general population in both Orange and San Diego counties is roughly 20 times larger. Imperial County is also very sparsely populated. Population density statistics for 2006 indicate that it is about 18 times less densely populated than San Diego County and nearly 100 times less densely populated than Orange County.² The population in Imperial County is 75% Latino, more than twice the Latino proportion of the general population in either Orange or San Diego counties.³

The fact that the population of Imperial County is so much smaller than that of the other two counties means that the size of the civilian labor force in Imperial County is also much smaller. In both Orange and San Diego counties, the labor force is roughly 25 times as large

as it is in Imperial County. Labor force participation is also smaller relative to the general population; about 40% of the general population in Imperial County participates in the labor force whereas in Orange County this proportion is 54% and in San Diego County it is 51%.⁴ This comparatively smaller proportion of the population participating in the labor force means that there are fewer workers supporting the county's dependent population (those segments of the population too young or too old to work).

The overall economy in Imperial County relies much more on agriculture than does the economy of either Orange County or San Diego County. Approximately 15% of the workforce is employed in agricultural occupations; in Orange County this proportion is 0.2%, and in San Diego it is 0.3%.⁵ The level of unemployment is much higher in Imperial County than it is in either Orange or San Diego County. The 2006 average unemployment rate in Imperial County was 15%, compared with 3.4% in Orange County and 4.0% in San Diego County. (The 2006 average for the state of California was 4.9%.⁶ These characteristics present a challenge when analyzing the region as a whole; Imperial County is unique in almost every context.⁷

² State of California Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000–2050. Sacramento, CA, July 2007.

³ Ibid.

⁴ California Employment Development Department, Official Estimates of Employment by Industry.

⁵ California Employment Development Department, 2007 Occupational Employment Statistics Survey.

⁶ California Employment Development Department, Labor Force and Unemployment Data.

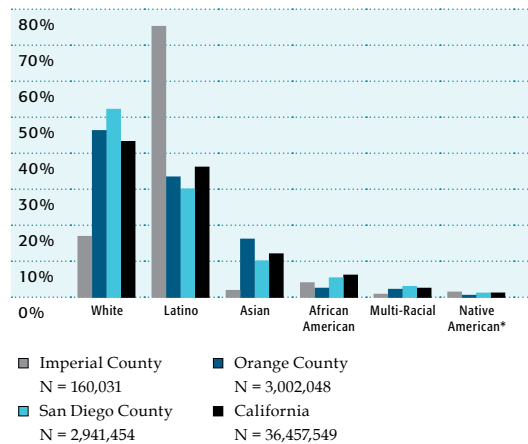
⁷ There are data challenges as well with respect to Imperial County. Because the population is so small, data are frequently suppressed to protect confidentiality. When data are available, it is often the case that the number of sample observations is so small that estimates lose meaning due to the wide variance.

... the population of Imperial County is largely Latino, about 75% of the total population.

Demographic Characteristics of the Population

The following tables and figures present data describing the features of the region's current population as well as projected changes to the region's future population. Whenever possible, data are presented at the county level. As noted above, however, data describing Imperial County frequently was unavailable, either because of the need to protect confidentiality or because a small sample size resulted in an unusable estimate.

Figure 1.
2006 General Population by Race/Ethnicity and by County

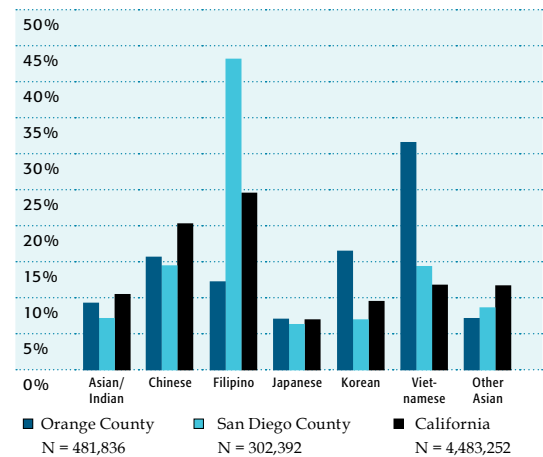


Source: 2006 American Community Survey
*Native American combines American Indian, Alaska Native, Native Hawaiian and Pacific Islander.

Figure 1 illustrates how the different racial/ethnic groups are distributed across the region's three counties and how their proportions generally compare with the distribution in California. With the exception of Imperial County, the white population remains the largest racial/ethnic group in the region. As a proportion of total population, it is largest in San Diego County, where it is still the majority; in Orange County the

white population represents roughly 47% of the general population. When compared with the overall California population, the general population in San Diego and Orange counties is represented by slightly larger white populations and slightly smaller Latino populations. The Asian population represents a considerably larger share of the general population in Orange County compared with its representation in San Diego County and in California as a whole. African Americans represent a smaller proportion of the general population in each of the region's counties than they do in California's general population. In stark contrast, the population of Imperial County is largely Latino, about 75% of its total population.

Figure 2.
2006 Asian Population by Selected Group⁸ and by County



Source: 2006 American Community Survey
*Chinese does not include Taiwanese.

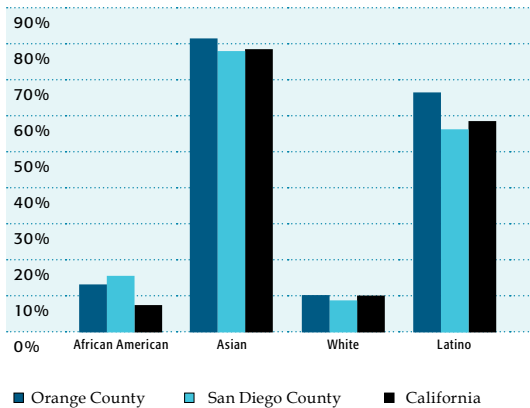
Figure 2 illustrates how selected subpopulations within the broader Asian population are distributed across the region's three counties, and how their proportions compare with the population's distribution generally in California. There are two striking features of the region's Asian population.

8 This figure combines race, ethnicity, ancestry and nationality. It includes native-born and foreign-born populations and U.S. citizens and non-U.S. citizens who self-identify as Asian in race and also as a member of one of the selected groups. The "Other Asian" category includes Taiwanese, Indonesian, Thai, Laotian, Pakistani, Sri Lankan, Bangladeshi, Malaysian, Hmong and any other self-identified Asian who did not choose one of the specific groups listed.

The first is that Vietnamese represent more than 30% of the Asian population in Orange County, a proportion far greater than that in the region's other counties and California as a whole. It is widely held that this is the largest concentration of Vietnamese outside of Vietnam. The second is that Filipinos represent well over 40% of the Asian population in San Diego County.

Similar data describing how the Latino population is distributed according to nationality show that in all counties (and in California), the Latino population overwhelmingly identifies as Mexican by national origin (approximately 87%).

Figure 3.
2006 Proportion of Population Ages 18 and Older by Foreign-Born Status, by Race/Ethnicity and by County



Source: 2006 American Community Survey

One striking characteristic illustrated by Figure 3 is the comparatively high proportion in the region of the African-American population ages 18 and older that is foreign born-in Orange County an estimated 13.6% and in San Diego County an estimated 15.4%. By contrast, in California, only 7.5% of this population is foreign-born. In San Diego

County, this population is growing fairly rapidly; in 2000, just 6% of the county's African-American population was identified as foreign-born. It is also notable that between 77% and 80% of the Asian population ages 18 and over is foreign-born, and that the proportion of the region's Latino population in this age group that is foreign-born is also very large. Estimates indicate that these proportions (Asian and Latino) are somewhat larger in Orange County, but overall, regional estimates are comparable to those describing the state as a whole.

... Vietnamese represent more than 30% of the Asian population in Orange County, a proportion far greater than that in the region's other counties and California as a whole... this is the largest concentration of Vietnamese outside of Vietnam.

Table 3.
Self-Reported Ability to Speak English: Latino and Asian Populations Over the Age of 25 by County

Self-Reported Ability to Speak English	Imperial		Orange		San Diego		California	
	Latino	Asian	Latino	Asian	Latino	Asian	Latino	Asian
Very Well	36.5%	N/A	31.8%	39.6%	39.0%	47.9%	36.5%	43.2%
Well	15.1%	N/A	21.0%	30.0%	21.4%	33.4%	20.2%	28.6%
Not Well	15.4%	N/A	28.9%	23.6%	25.5%	15.1%	26.0%	20.9%
Not At All	33.0%	N/A	18.3%	6.8%	14.1%	3.6%	17.3%	7.3%

Source: 2006 American Community Survey

The region's Latino and Asian populations were selected for analysis of self-reported ability to speak English because large proportions of both groups are foreign-born. These populations were then stratified to select for only those over the age of 25. The most striking of these estimates is that one in three Latinos in Imperial County does not speak any English. There are not big differences in the proportions of the over-25 Latino population in each county that report speaking English either "not well" or "not at all"; however, it is important to recognize that in each county this proportion is around 48%. In other

1 in 3 Latinos in Imperial County does not speak English... [this] raises issues of patient-caregiver communication in the context of delivery and receipt of health care services.

Table 4.
Median Age by Race/Ethnicity and by County

Race/Ethnicity	Imperial	Orange	San Diego	California
African American	35.7	34	28.7	32.7
Native American	N/A	N/A	30.6	34.6
Native Hawaiian/Pacific Islander	N/A	30.7	31.7	31.6
Multiracial	N/A	16.7	17.1	18.6
Asian	34.1	36.4	35.9	36.8
White	44.7	43.1	40.6	42.4
Latino	27.3	26	25.8	26.5

Source: 2006 American Community Survey

words, an estimated one half of the Latino population across the region speaks either not much English or no English at all. The large proportion of limited English speakers among the region’s Latino population has important implications. It is a potential barrier to labor force participation, but it also raises issues of patient-caregiver communication in the context of delivery and receipt of health care services.

For most racial/ethnic groups, there is no discernible difference in the median age across these three counties or in the state as a whole. The exception is the African-American population in San Diego County, which with an average age of 28.7 is considerably younger than the African-American population either in Imperial or Orange County or throughout the state. This situation is most likely the result of comparatively high fertility rates among African-American women between the ages of 15 and 19 in San Diego County (see next page). The finding may also correlate with the relatively large proportion of San Diego County’s African-American population that is foreign-born. (Fertility rates among foreign-born women are typically higher than those

of native-born women.)⁹ In addition, the Latino population is much younger than other racial/ethnic groups (the exception being the multiracial population), and the white population is much older.

Tables 5 and 6 display data describing live births to women of child-bearing age (15 to 44 years old) by race/ethnicity and by the mother’s county of residence. Table 5 presents the total number of live births and shows how the births were distributed proportionally across the different racial and ethnic groups. Although the Latino population is currently smaller than the white population in both Orange and San Diego counties, these birth statistics are consistent with the population data presented in the next section that project dramatic changes in the racial/ethnic composition of the population in both counties over the coming decades.

Table 5 shows that in 2005, a majority of the live births delivered to women residing in Orange County were to Latina women; in San Diego these births comprised a near majority. The data also show that the proportion of live births delivered to Asian mothers was greatest in Orange County, a finding

⁹ Hans P. Johnson, *Birth Rates in California*. Public Policy Institute of California. November 2007.

Table 5.

2005 Live Births to Women Ages 15–44 by Race/Ethnicity and by County (Residence of Mother)*

County	Number of Live Births to Women Ages 15–44*	Latino	White	Asian	African American	Native American	Native Hawaiian/Pacific Islander
San Diego	42,731	46.7%	36.4%	9.8%	5.6%	0.6%	0.9%
Orange	42,626	51.8%	31.6%	14.6%	1.3%	0.2%	0.5%
Imperial	3,040	88.8%	7.8%	1.3%	1.1%	0.9%	0.1%

Source: Rand California Population and Demographic Statistics

*Includes only those births for whom the Race/Ethnicity of the mother was reported.

Table 6.

Live Births to Women Ages 15–44 per 1000 Population by Race/Ethnicity and by County (Residence of Mother)*

County	Hispanic	White	Asian	African American	Native American	Native Hawaiian/Pacific Islander
San Diego	86	53	56	74	49	N/A
Orange	88	52	54	47	39	N/A
Imperial	87	58	N/A	N/A	N/A	N/A

Source: Rand California Population and Demographic Statistics; 2005 American Community Survey.

*Includes only those births for whom the Race/Ethnicity of the mother was reported.

that underscores the fact that regionally the Asian population is largest in Orange County. Likewise, the African-American population is largest in San Diego County, and the proportion of live births delivered to African-American mothers in 2005 was greatest in San Diego County. It is also notable that although Latinos currently represent about 75% of the general population in Imperial County, approximately 88% of the live births delivered there in 2005 were to Latina women.

Table 6 adjusts the number of live births for the size of the race/ethnicity-specific population of women of childbearing age to estimate a fertility rate. For example, in 2005 in San Diego County, the fertility rate for Latina women of childbearing age was 88 per. These data

show that for Latina, White, and Asian women, adjusted fertility rates are consistent across the region. However, for African-American women, the adjusted fertility rate is much higher in San Diego County than it is in Orange County. Similarly, the adjusted fertility rate for Native American women is much higher in San Diego County than it is in Orange County.

Although data describing live births and adjusted fertility rates for young women between the ages of 15 and 19 are not presented here, across the region the majority of births to women in this age group were to Latina women. By county, anywhere from 70% to 90% of the births to women between the ages of 15 and 19 in 2005 were delivered to Latina women. Data also

Table 7.

Proportion of Population Ages 25 and Over Holding an Associate’s Degree or Higher by Race/Ethnicity and by County

Race/Ethnicity	Imperial	Orange	San Diego	California
General Population	16.8%	42.9%	41.6%	36.6%
African American	N/A	44.3%	29.8%	30.8%
Native American	N/A	20.2%	29.3%	21.0%
Native Hawaiian/Pacific Islander	N/A	N/A	N/A	21.9%
Multiracial	N/A	N/A	N/A	33.8%
White	26.7%	51.4%	50.0%	46.0%
Asian	N/A	60.0%	53.4%	55.6%
Latino	13.1%	15.4%	19.2%	14.3%

Source: 2006 American Community Survey

Table 8.

2006 Per Capita Income by Race/Ethnicity and by County (2006 Inflation-Adjusted Dollars)¹⁰

Race/Ethnicity	Imperial	Orange	San Diego	California
General Population	\$14,368–\$16,730	\$31,406–\$32,332	\$28,423–\$29,103	\$26,862–\$27,086
African American	\$3,390–\$9,988	\$25,194–\$33,552	\$19,512–\$22,356	\$19,922–\$20,606
Native American	\$6,193–\$10,663	N/A	\$21,414–\$27,948	\$19,929–\$22,201
Native Hawaiian/Pacific Islander	N/A	\$16,365–\$25,187	\$19,271–\$28,265	\$18,840–\$21,422
White	\$27,180–\$34,034	\$43,592–\$45,572	\$37,931–\$39,363	\$37,961–\$38,487
Asian	N/A	\$28,620–\$31,582	\$24,550–\$26,948	\$28,476–\$29,108
Latino	\$11,284–\$13,990	\$15,142–\$16,316	\$14,806–\$15,644	\$14,566–\$14,818

Source: 2006 American Community Survey.

show that the adjusted fertility rate for African-American women between the ages of 15 and 19 in San Diego County was much higher than that in Orange County. This factor contributes to the comparatively young median age of the African-American population in San Diego County and may correlate with the county’s relatively large proportion of the African-American population that is foreign-born.

Although it was not possible to calculate statistics describing educational attainment for all racial/ethnic groups

across all counties in the region, there are still several striking data presented in the above table. First, the proportion of the selected population in Imperial County that holds an associate’s degree or higher is substantially smaller than it is in the other counties. Second, there is a within-group difference among the region’s African-American population.

The proportion of the selected African-American population in San Diego County holding an associate’s degree is much smaller than it is in Orange County and

¹⁰ Per capita income measures for the multiracial population were not included because such a large proportion of this population is not working-age.

in California as a whole. Finally, it is clear that the level of educational attainment of the Latino selected population across both the region and the state is currently far below that of other racial/ethnic groups.

Economic Characteristics of the Population

Despite the limitations of these data¹¹, there are some conclusions that can be drawn. It is clear that per capita income in Imperial County is substantially lower than it is in both Orange and San Diego counties. This situation is true both for the general population and across all racial/ethnic groups. Per capita income is generally higher in Orange County than it is in the other counties in the region and in California as a whole. There is a region-wide differential in per capita income among African Americans, who earn comparatively more in Orange County than they do in the other counties.¹² Finally, for all three counties (as well as for the rest of California), the data indicate that per capita income for the white population is far higher than it is for all other racial/ethnic groups.

Again, the data presented in Table 9 have limitations.¹⁴ However, there are some conclusions to be drawn. As expected, the proportion of the general population in Imperial County reporting income below the federal poverty line in 2006 was much larger than it was in the other counties in the region and California as a whole. Also as expected, the comparatively smallest proportions of each population group reporting income below the poverty line were found in Orange County. But the most striking feature of these estimates is that nearly one-fifth of the Latino population across the region reported income below the federal poverty line in 2006.

Regional Population Projections¹⁵

Orange County and San Diego County are currently the second and third most populous counties in California (behind Los Angeles County). In terms of the absolute change in population size projected to occur during the next 25 years, San Diego County ranks third largest and Orange County sixth largest among all counties in the state.¹⁶

11 The per capita income range presented for each cell in Table 8 represents a 90% confidence interval around the estimate. In several instances the range is quite large. This result is a function of small sample size and indicates a less reliable estimate. In some instances, it was not possible to generate an estimate.

12 To some extent, higher per capita income may reflect the comparatively smaller size of the African-American population in Orange County, but estimates of African-American household and family income are also substantially higher in Orange County than in San Diego County or in California as a whole.

13 For a detailed discussion of federal poverty guidelines see <http://aspe.hhs.gov/poverty/06poverty.shtml>.

14 The same caveat pertaining to small sample size and the inability to calculate estimates of per capita income applies to the poverty estimates presented in Table 8. The very small population of Native Americans and Native Hawaiian/Pacific Islanders in each county translates into a small number of sample observations, which prohibits generating a meaningful estimate of the proportion of these population groups reporting income below the poverty level.

15 Detailed population projections data at the county level are included in Appendix E.

16 State of California Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000–2050. Sacramento, CA, July 2007.

Table 9. Proportion of Population (%) Reporting 2006 Income below the Federal Poverty Level by Race/Ethnicity and by County¹³

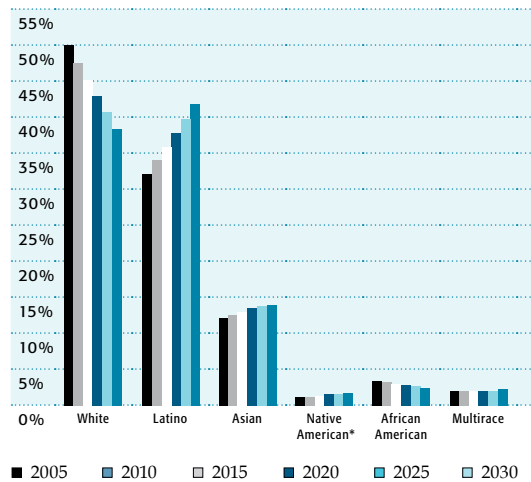
Race/Ethnicity	Imperial	Orange	San Diego	California
General Pop.	18.1%	9.7%	11.7%	13.1%
African American	N/A	13.0%	18.2%	20.6%
Native American	N/A	N/A	N/A	16.7%
Native Hawaiian/Pacific Islander	N/A	N/A	N/A	13.7%
Multiracial	N/A	6.8%	8.9%	11.7%
White	N/A	5.6%	6.9%	8.1%
Asian	N/A	10.2%	10.7%	10.0%
Latino	19.5%	15.4%	19.2%	19.1%

Source: 2006 American Community Survey

By 2030...Latinos under the age of 18 are expected to represent a majority in all counties...the region's available pool of health care labor will become increasingly Latino.

In total, the region's current population of roughly six million is projected to grow by more than 1.6 million people between 2005 and 2030. An estimated 75% of this projected increase will be the result of growth in the region's Latino population; approximately 20% will be the result of growth in the region's Asian population.¹⁷

Figure 4.
2005–2030 Projected Population by Race/Ethnicity:
San Diego Region



Source: California Department of Finance, Demographic Research Unit
*Because of small numbers, the Native American category aggregates estimates for the American Indian/Alaska Native population and the Native Hawaiian/Pacific Islander population.

By the year 2030, it is projected that Latinos will form the largest racial/ethnic population group in the region, with substantial population growth occurring in each county. In terms of absolute change, this growth is expected to be most dramatic in Orange County but projections also indicate that the population in Imperial County will be almost entirely Latino at some future point.¹⁸ As noted above, the region's Asian population will also experience significant (though comparatively modest) population growth, which is expected to occur evenly in both San Diego and Orange counties.¹⁹

The region's white and African-American populations are projected to decline modestly in size over the next 25 years. Projected changes for the white population will be driven by a fairly significant decline in Orange County offset by a small increase in San Diego County; for the region's African-American population, the decline is projected to be largest in San Diego County. Native American population growth in the region is projected to come from a substantial increase in San Diego County (including both American Indians/Alaska Natives and Native Hawaiians/Pacific Islanders).

Other key projections concern the region's dependent population (the non-working age population segments), under the age of 18 and over the age of 65. Overall, the region's under-18 population is already a Latino majority, but not yet in each county.²⁰ By 2030, this is projected to change; Latinos under the age of 18 are expected to become a majority in all counties. For the foreseeable future, the region's available pool of health care labor will become increasingly Latino.

The region's population over the age of 65 is projected to grow by roughly 850,000 during the next 25 years, which would more than double the size of each county. This is expected to impact consumer demand for health care services, as well as the mix of needed human resources to meet shifting trends in consumer demand. Population projections also indicate that the region's dependent population will grow more rapidly over the coming decades relative to the

17 Ibid.
18 Latinos are projected to become nearly 85% of Imperial County's population by 2030.
19 Rapid Asian population growth is also projected for Imperial County, but in absolute terms this growth will be tiny by comparison with Orange and San Diego counties.
20 Whites still represent a majority of San Diego County's under-18 population.

working-age population. This kind of shift in the dependency ratio would be expected to impact not only demand for health care services but possibly the balance of resources available to finance, in particular, public health care systems.²¹

The Composition of the Current Health Professions Workforce in the San Diego Region

Data from the 2005 and 2006 American Community Survey were combined in order to produce estimates of selected characteristics of the regional health professions workforce. Because this analysis is focused on a sub-state geographical region, we were not able to generate estimates at either the level of individual occupation or at the geographical level of individual counties because the number of sample observations in the survey data was too small. Our second-best option was to describe the regional health professions workforce (all counties aggregated together) and to use broader occupational groupings derived from the Standard Occupation Code (SOC) classification system. All of the occupations selected for analysis are represented by one of several broad groups.²²

- Health Diagnosing & Treating Practitioners (SOC 29-1000)
- Health Technologists & Technicians (SOC 29-2000)
- Health care Support Occupations (SOC 31-0000)
- Community & Social Service Counselors, Social Workers, and Community/Social Service Specialists (SOC 21-1000)²³

Occupations included in Health Diagnosing and Treating Practitioners are those that generally require the

highest levels of education and are the highest paid in health care. Occupations selected for analysis in this report that are represented by this broad occupational group are Registered Nurse Practitioners and Physician Assistants. Selected allied health occupations represented by the broad group Health Technologists and Technicians include Dental Hygienists, Clinical Laboratory Scientists and Technicians, Pharmacy Technicians, Psychiatric Technicians and Licensed Vocational Nurses. These occupations typically require an associate's degree for entry into practice. Although workers in some of these occupations earn high wages, when the broad group is considered as a whole, workers are less well-paid than diagnosing and treating practitioners are.

Health care Support Occupations are entry-level health care positions at the low end of the wage scale and typically require less than a year of formal training (or only require on-the-job training). Occupations represented by this broad group that were selected for analysis in this report include Nursing Aides, Home Health Aides, Dental Assistants and Medical Assistants.

Counselors, Social Workers and Community and Social Service Specialists include the following occupations selected for analysis in this report: Substance Abuse and Behavioral Disorder Counselors, Mental Health Counselors, Medical and Public Health Social Workers, Mental Health & Substance Abuse Social Workers and Public/Community Health Educators.

²¹ The dependency ratio describes the economically dependent portion of a population relative to the economically productive part of the population. General economic theory holds that an increasing dependency ratio puts strain on certain systems financed by public resources because the supply of these resources (the economically productive portion of the population) is smaller relative to demand for these resources (the economically dependent portion of a population).

²² The specific occupations that are represented by these broad groups are detailed in Appendix A: Detailed Listing of Occupations Represented by Broad Standard Occupation Code Groups Used in This Report.

²³ Sample observations of this broad occupational group were cross-tabulated with industry codes to select only those counselors, social workers and social service specialists identified as working in health care-related industries.

Table 10.

2005/2006 Regional Health Professions Workforce by Educational Attainment, by Gender and by Race/Ethnicity:
San Diego Region

Occupational Group	Educational Attainment (Degree Held)	Proportion of Occupational Group (%)	Gender		Race/Ethnicity				
			Male (%)	Female (%)	White (%)	Asian (%)	African American (%)	Latino (%)	Other* (%)
Counselors/ Social Workers/ Community & Social Service Specialists (SOC 21-1000)	Master's or higher	34.2%	30.4%	69.6%	70.4%	10.2%	3.7%	13.6%	2.1%
	Below Master's	65.8%	33.1%	66.9%	44.7%	15.0%	9.2%	26.8%	4.3%
Diagnosing & Treating Practitioners (SOC 29-1000)	Master's or higher	51.7%	52.4%	47.6%	63.7%	24.6%	2.1%	8.1%	1.5%
	Below Master's	49.3%	16.6%	83.4%	57.6%	27.8%	2.5%	10.6%	1.5%
Health care Technologists & Technicians (SOC 29-2000)	Associate's or higher	72.0%	32.1%	67.9%	56.8%	23.7%	2.9%	14.5%	2.1%
	Below Associate's	28.0%	20.5%	79.5%	41.4%	10.0%	8.9%	36.9%	2.8%
Health care Support Occupations (SOC 31-1000)	Associate's or higher	54.5%	20.8%	79.2%	45.0%	24.0%	4.6%	23.9%	2.5%
	Below Associate's	45.6%	13.2%	86.8%	32.8%	15.3%	3.6%	45.5%	2.8%
Regional Labor Force²⁴	—	—	50.8%	49.2%	50.1%	13.9%	3.1%	30.4%	2.5%

Source: Combined 2005 and 2006 American Community Survey PUMS for California

* Other includes American Indian, Native Alaskan, Native Hawaiian and multiracial.

The estimates presented in Table 10 show a clear, general pattern: Racial and ethnic diversity in the region's health professions workforce diminishes as the level of educational attainment increases. This pattern is most pronounced in three categories: Counselors, Social Workers and Community and Social Service Specialists, Health care Technologists and Technicians, and Health care Support Occupations. In each case, the proportion of white health care workers decreases as educational attainment decreases. In addition, excepting the broad group of community/social service professionals, the

proportion of Asian health care workers also decreases as educational attainment decreases. In the case of Diagnosing and Treating Practitioners, a category that includes the most highly trained, well-paid workers in health care occupations, differences in educational attainment do not affect the concentration of white and Asian health care workers. It is also worth noting that men are most heavily represented among the most highly educated and well-paid workers in the occupational group Diagnosing and Treating Practitioners who hold a master's or more advanced degree.

²⁴ The region's population between the ages of 18 and 65 is used to proxy the actual labor force.

We also examined the status of foreign-born workers in the region's health professions workforce. We found that roughly 35% of the region's general labor force is foreign-born, and that within the health care sector this proportion declines slightly, to approximately 31%. Asians represent well over half of the region's foreign-born health care workforce (57%), and roughly eight of every ten Asian health care workers in the regional sample during the period 2005–2006 were foreign-born. This is a proportion roughly equal to the proportion of the Asian general population of working age that is foreign-born. Asian foreign-born health care workers are most highly represented in the broad occupational group Health care Diagnosing and Treating Practitioners, and as noted above, workers in these occupations are generally the most highly trained and highly paid.

By contrast, foreign-born Latinos represent just 26% of the region's foreign-born health care workforce, and roughly four out of every ten Latino health care workers in the regional sample taken during the period 2005–2006 were foreign-born. What these data indicate is that foreign-born Latinos are less likely to work in health care professions compared with other occupations (the proportion of the general Latino population of working age that is foreign-born is roughly 60%). Latino foreign-born health care workers are most highly represented in the broad occupational group Health care Support Occupations, which are generally entry-level occupations requiring little formal training and which rank at the bottom of the wage scale.

Labor Market and Education Data by Occupation

DENTAL ASSISTANT AND DENTAL HYGIENIST

Description: Dental Assistant

Registered Dental Assistants are licensed in California by the Committee on Dental Auxiliaries. However, dental assistants may also work as unlicensed professionals. By law, unlicensed Dental Assistants perform only the most basic tasks to support a dentist. Their scope of practice includes preparing patients for treatment, obtaining their dental records, sterilizing and disinfecting instruments and equipment, preparing trays of instruments and performing a limited number of technical procedures. By contrast, licensed Registered Dental Assistants have a considerably wider scope of practice that involves performing many more technical procedures. In fact, there is a fair amount of overlap between the Registered Dental Assistant scope of practice and the Registered Dental Hygienist scope of practice. The key difference is that for those procedures that Registered Dental Assistants and Registered Dental Hygienists share in common, state regulations require that a supervising Dentist be physically present when the Dental Assistant performs them. The Registered Dental Hygienist would be allowed to perform the same procedure without a Dentist being physically present.²⁵

Foreign-born Latinos are less likely to work in health care professions compared with other occupations.

²⁵ A table listing allowable duties by type of dental auxiliary is available on the COMDA website at <http://www.comda.ca.gov/index.html>

Employment and Wage Data:

Dental Assistants

Tables 11 and 12 display information on current employment, employment to population ratios, wages and expected occupational growth for Dental Assistants in the San Diego region.

Description: Dental Hygienist

Registered Dental Hygienists (RDH) are licensed in California by the Committee on Dental Auxiliaries. The (RDH) scope of practice includes removing soft and hard deposits from teeth, teaching patients how to practice good oral hygiene and providing other preventive dental care. Hygienists examine patients’ teeth and gums and record the presence of diseases or abnormalities. They remove calculus, stains and plaque from teeth; perform root planning as a periodontal therapy; take and develop dental x-rays; and apply cavity-preventive agents

such as fluorides and pit and fissure sealants. With additional training, and under the direct supervision of a Dentist, Registered Dental Hygienists in California can deliver local anesthesia as well as nitrous oxide and oxygen.

Employment and Wage Data:

Dental Hygienist

Tables 13 and 14 display information on current employment, employment to population ratios, wages and expected occupational growth for Dental Hygienists in the San Diego region.

Summary of Labor Market Information: Dental Assistant and Dental Hygienist

A substantial difference in the workforce size of both Dental Assistants and Dental Hygienists is noticeable when comparing the employment data for San Diego and Orange counties. The estimated size of the

Table 11. 2006 Dental Assistant Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	3,420	116	\$ 16.37	\$ 34,050
Orange	4,280	143	\$ 14.86	\$ 30,908
Imperial	120	75	\$ 11.04	\$ 22,963

Source: California Employment Development Department, Labor Market Information Division

Table 12. 2004–2014 Dental Assistant Employment Projections/ Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 10%	Top 10%	193
Orange	Top 20%	Top 10%	251
Imperial	Top 10%	Top 30%	6

Source: California Employment Development Department, Labor Market Information Division

Table 13.

2006 Dental Hygienist Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	1,090†	39†	\$ 42.64	\$ 88,691
Orange	2,600	87	\$ 39.54	\$ 82,243
Imperial	—	—	—	—

†2005 Estimate. Source: California Employment Development Department, Labor Market Information Division

Table 14.

2004–2014 Dental Hygienist Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 10%	Top 50%	36
Orange	Top 20%	Top 30%	69
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Dental Assistant workforce in San Diego County is roughly 80% that of Orange County; the estimated size of the Dental Hygienist workforce in San Diego County is roughly 40% that of Orange County. The smaller size of the workforce in San Diego County correlates with higher wages for both occupations, a finding that is consistent with general theories of labor economics maintaining that a limited supply of labor leads to higher wages.

Employment for both Dental Assistants and Dental Hygienists is projected to grow rapidly across the region during the coming decade (although employment projections for Dental Hygienists in Imperial County are not available). The Dental Assistant workforce is much larger than the Dental Hygienist workforce, a condition that means that the actual

number of employment opportunities will be much greater for Dental Assistants. This size differential, however, is more pronounced in San Diego County than in Orange County. Employment projections for San Diego County indicate that for every one new employment opportunity for Dental Hygienists, there will be five new opportunities for Dental Assistants; in Orange County this ratio is roughly 1:4.

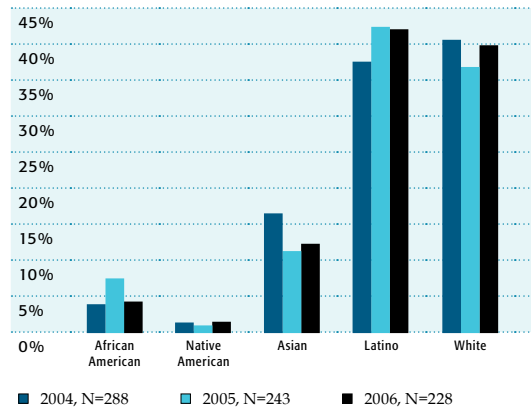
As with all occupations examined in this report, estimated wages are lower and the level of employment relative to the size of the population is smaller in Imperial County than in either San Diego or Orange counties. No data are available to describe the Dental Hygienist workforce in Imperial County, but Dental Assistants earn roughly between 65% and 75% of what they are paid in either San Diego or Orange

The proportion of white health care workers decreases as educational attainment decreases.

Counties, and the ratio of Dental Assistants to general population in Imperial County is anywhere from half to two thirds as large as it is in the two other counties.

Education Data: Dental Assistant

Figure 5. 2004–2006 Racial/Ethnic Composition for Reported Graduates of Dental Assistant Programs: San Diego Region



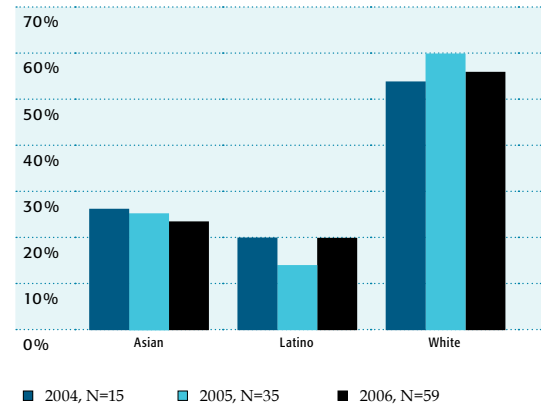
Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Dental Assistant

There were eight schools reporting graduates of Dental Assistant programs in 2006: four of these schools were regional community colleges and the other four were private, for-profit institutions. The four private, for-profit institutions produced about 75% of the Dental Assistant graduates in the region. The gender composition heavily favored women; more than 90% of Dental Assistant graduates were women. The racial/ethnic composition of graduates was concentrated among Latino and white students. The size of these two groups was very similar, and in combination they represented roughly 80% of the reported graduates.

Education Data: Dental Hygienist

Figure 6. 2004–2006 Racial/Ethnic Composition for Reported Graduates of Dental Hygienist Programs: San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Dental Hygienist

There are two Dental Hygiene programs in the San Diego region, at Cypress College and Southwestern College²⁶; both offer associate’s degrees. The program at Southwestern College is a newer program and only recently reached full capacity, which explains the increasing number of graduates between 2004 and 2006. Roughly nine out of every ten Dental Hygiene graduates in the region were women. The racial/ethnic composition of Dental Hygiene graduates in recent years has been consistent; whites represent the largest group, forming roughly 50% to 55% of the total. There have been no reported African American or Native American graduates in the past three years.

26 The San Diego Welcome Back International Health Worker Assistance Program is developing a customized dental hygiene curriculum for Internationally trained Dentists. The program will be offered as an accelerated dental hygiene program at Southwestern College.

MEDICAL ASSISTANT

Description: Medical Assistant

The Medical Assistant is an unlicensed occupation. Medical Assistants perform a variety of administrative and clinical tasks to keep the offices of physicians, podiatrists, chiropractors and other health practitioners running smoothly. The scope of practice of medical assistants varies from office to office, depending on the location and size of the practice and the practitioner’s specialty. In small practices, medical assistants usually are generalists, handling both administrative and clinical duties and reporting directly to an office manager, physician or other health practitioner. In larger practices or clinics, Medical Assistants tend to specialize in a particular area and are under the supervision of department administrators. Clinical duties vary according to state law and include taking medical histories and recording vital signs, explaining treatment procedures to patients, preparing patients for examination and assisting the physician during the examination.

Employment and Wage Data: Medical Assistant

Tables 15 and 16 display information on current employment, employment to population ratios, wages and expected occupational growth for Medical Assistants in the San Diego region.

Table 15.

2006 Medical Assistant Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	5,700	194	\$ 12.85	\$ 26,728
Orange	5,260	175	\$ 13.61	\$ 28,308
Imperial	200	125	\$ 10.69	\$ 22,235

Source: California Employment Development Department, Labor Market Information Division

Table 16.

2004–2014 Medical Assistant Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 1%	Top 10%	283
Orange	Top 5%	Top 10%	295
Imperial	Top 5%	Top 20%	8

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Medical Assistant

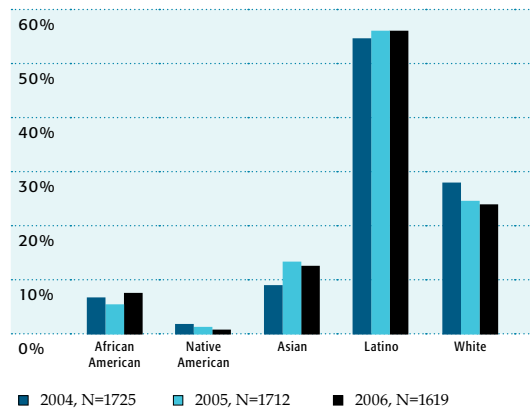
Across the region the Medical Assistant workforce is one of the fastest growing, and the number of employment opportunities is projected to be substantial. The size of the Medical Assistant workforce in both San Diego and Orange counties are roughly equal, as are the projected number of annual employment opportunities for Medical Assistants during the coming decade. Among health care occupations in Imperial County for which employment estimates are available, the Medical Assistant workforce is third largest behind the Registered Nursing workforce (largest) and Nursing Assistant workforce (second largest). However, the projected number of job openings is still

There have been no reported African American or Native American [Dental Hygiene] graduates in the past three years.

very small. This situation is the result of structural conditions in Imperial County's economy. Job growth is limited, both in the health care sector and generally.

Education Data: Medical Assistant

Figure 7.
2004–2006 Racial/Ethnic Composition for Reported Graduates of Medical Assistant Programs: San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Medical Assistant

There were 30 different Medical Assistant programs that reported graduates in 2006: seven of these were regional community colleges and the remaining 23 were private, for-profit institutions. The region's private for-profit institutions produced more than 90% of the graduates. In 2006, the seven regional community colleges that host Medical Assistant programs reported a combined total of 12 graduates. The gender composition heavily favored women; they represented 90% of graduates. The racial/ethnic composition of Medical Assistant programs has been consistent during the past three

years. Latinos represented the largest racial/ethnic group, forming roughly 55% of the total number of reported graduates each year from 2004 and 2006. The number of Medical Assistant programs may have been greater than the 30 that have reported student data because private schools often do not report to IPEDS. In this case, the data presented here may be an under-representation of the actual total number of students graduating from Medical Assistant programs in the region.



PHARMACY TECHNICIAN

Description: Pharmacy Technician
Pharmacy Technician is a registered profession in California. As of January 2004, prior experience as a Pharmacy Clerk or even as a Pharmacy Technician is no longer an acceptable qualification for registration in the state. Registered Pharmacy Technicians must meet educational standards defined by the California State Board of Pharmacy. The scope of work for Pharmacy Technicians encompasses routine tasks meant to help prepare prescribed medication for patients, such as counting tablets and

labeling bottles. Those working in retail or mail-order pharmacies have varying responsibilities such as receiving written prescriptions or requests for prescription refills from patients; preparing prescriptions, which may involve mixing the medication; establishing and maintaining patient profiles; preparing insurance claims; and managing inventory. In hospitals, nursing homes and assisted-living facilities, pharmacy technicians have additional responsibilities, including reading patients' charts and preparing and delivering medicines to patients.

**Employment and Wage Data:
Pharmacy Technician**

Tables 17 and 18 display information on current employment, employment to population ratios, wages and expected occupational growth for Pharmacy Technicians in the San Diego region.

**Summary of Labor Market
Information: Pharmacy Technician**

Employment opportunities for Pharmacy Technicians are expected to grow rapidly across the region during the coming decade. The overall size of the workforce, however, means that the actual number of opportunities will be somewhat more modest (compared with those for Medical Assistants, for example). The Pharmacy Technician workforce in Imperial County is one of the few exceptions to the general characteristic that health care workers earn more in both San Diego and Orange counties. Additionally, the level of employment for Pharmacy Technicians relative to employment opportunities for the general population in Imperial County is roughly equal to that in the two other counties. This finding suggests an industrial concentration in Imperial County that is relatively good at creating employment opportunities for Pharmacy Technicians.²⁷

Table 17.
2006 Pharmacy Technician Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	1,820	62	\$ 16.59	\$ 34,507
Orange	2,030	68	\$ 15.37	\$ 31,969
Imperial	90	56	\$ 16.03	\$ 33,342

Source: California Employment Development Department, Labor Market Information Division

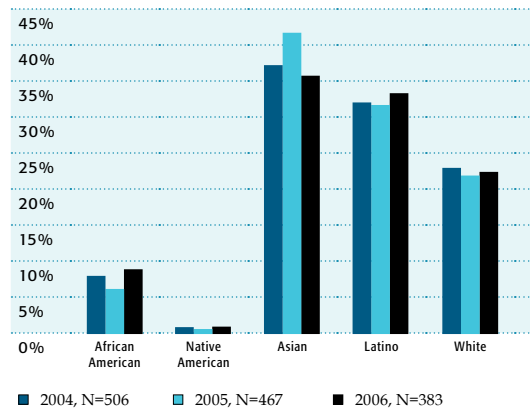
Table 18.
2004–2014 Pharmacy Technician Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 10%	Top 25%	72
Orange	Top 20%	Top 30%	70
Imperial	Top 15%	Top 50%	3

Source: California Employment Development Department, Labor Market Information Division

²⁷ It is worth noting that employment projections data indicate that Pharmacist will be the fastest-growing health care occupation in Imperial County during the coming decade, second only to registered nursing in terms of the expected number of annual job openings.

Figure 8.
2004–2006 Racial/Ethnic Composition for
Reported Graduates of Pharmacy Technician
Programs: San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Pharmacy Technician²⁸

Seven different programs reported graduates of Pharmacy Technician programs in 2006: one of the seven was a regional community college and the remaining six were private, for-profit institutions. These six private, for-profit institutions produced approximately nine out of every ten Pharmacy Technician graduates. The gender composition of Pharmacy Technician graduates favored women, approximately seven out of ten graduates were women. The racial/ethnic composition of Pharmacy Technician graduates was comparatively balanced: Asian and Latino students represented roughly equal proportions and formed the largest share of graduates.

²⁸ These data do not include graduates of an accelerated Pharmacy Technician course designed to assist internationally trained Pharmacists in becoming certified Pharmacy Technicians. That course is sponsored by the San Diego/Imperial Valley Welcome Back Center.



CLINICAL LABORATORY SCIENTIST

Description: Clinical Laboratory Scientist

Clinical Laboratory Scientists perform a range of complex laboratory tests and procedures that involve knowledge of chemistry, biology, microbiology, molecular biology, hematology, immunology, toxicology, histology and cytogenetics. The Clinical Laboratory Scientist (aka the Medical Technologist, aka the Clinical Laboratory Technologist) is a generalist qualified to conduct necessary tests and procedures across this entire range of specialized areas. There is also the category of Limited Clinical Laboratory Scientist, which is for professionals who conduct tests and procedures within only a specialized area of knowledge, such as toxicology or cytogenetics.

Employment and Wage Data:

Clinical Laboratory Scientist

Tables 19 and 20 display information on current employment, employment to population ratios, wages and expected occupational growth for Clinical Laboratory Scientists in the San Diego region.

Table 19.
2006 Clinical Laboratory Scientists Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	750	25	31.16	64,813
Orange	1,210	40	32.20	66,976
Imperial	—	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Table 20.
2004–2014 Clinical Laboratory Scientists Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 25%	Top 50%	33
Orange	Top 30%	Top 30%	61
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Clinical Laboratory Scientist

The size of the Clinical Laboratory Scientist workforce is significantly larger in Orange County than it is in San Diego County (there is no data available for Imperial County). This disparity is due to a concentration of private sector laboratories in Orange County. Estimated wages for the position, however, are roughly equal in both counties. Projected growth in employment opportunities for Clinical Laboratory Scientists during the coming decade ranks in the top one-third of all occupations. The annual number of job opportunities in Orange County is projected to be twice the number in San Diego County.

These data also include Public Health Microbiologists who work in local, county and municipal public health laboratories. Staff at these laboratories range from

laboratory assistants who are mainly trained on the job to baccalaureate-trained microbiologists and PhD-level laboratory directors. Each county in the San Diego region has a public health laboratory. According to information published by a new outreach program charged with recruiting California’s future public health laboratory workforce, during the next three years the San Diego County laboratory will need to recruit enough workers to replace approximately 40% of its current staff.²⁹ No information on projected staffing needs for the labs in either Orange or Imperial County was available.

There are other clinical laboratory occupations performed by unlicensed personnel. They conduct non-complex tests and procedures or general laboratory assistant duties. California has developed a new license category for the Medical

²⁹ Lab Aspire is an outreach program aimed at recruiting “the next generation of qualified laboratory directors.” It is a collaboration of U.C. Davis, U.C. Berkeley, UCLA, the California Department of Public Health, the California Association of Public Health Laboratory Directors and the California Wellness Foundation. More information about it is available at <http://www.labaspire.org>

Laboratory Technician with education at the associate's degree level. However, due to administrative delays, the process for licensure has not begun yet, and only a few community colleges have opened programs or plan to start them. Nevertheless, it is likely that there will be a significant number of employment opportunities for these mid-level clinical laboratory personnel in the future.

Education Data: Clinical Laboratory Science

There are no readily available data to describe students who participate in Clinical Laboratory Science training programs. The basic requirements include a baccalaureate degree in the natural sciences and completion of a 12-month post-baccalaureate training program at an approved site. For the generalist Clinical Laboratory Scientist, there are two approved programs in the San Diego region, both of which train from three to five students per year. One program is hosted by U.C. San Diego Extension and another is hosted by U.C. Irvine. There are several programs in the region that have been approved to train the specialist (limited) Clinical Laboratory Scientist. These are:

- U.C. San Diego (Clinical Microbiologist)
- Quest Diagnostics Nichols Institute (Clinical Chemist, Clinical Genetic Molecular Biologist, Clinical Microbiologist, Clinical Cytogeneticist)
- Ambry Genetics Corporation (Clinical Genetic Molecular Biologist)
- US Labs (Clinical Cytogeneticist)
- Genzyme Genetics (Clinical Cytogeneticist)
- Genetics Center (Clinical Cytogeneticist)

There are no readily available data on the annual number of students who pursue training in these specialized laboratory science programs, nor is there information about where these students are eventually employed. It may be that the companies that sponsor laboratory specialist programs are primarily training their own workforces. Training requirements for public health microbiologists include earning a baccalaureate degree in microbiology or in a related field, which is then followed by six months of training in a public health laboratory and passing the California certifying exam.



HOME HEALTH AIDE AND NURSING ASSISTANT

Description: Home Health Aide

Home Health Aides help elderly, convalescent or disabled persons live in their own homes instead of in a health care facility. Under the direction of nursing or medical staff, these aides provide health-related services. Like nursing aides, home health aides may check the pulse rate, temperature

and respiration rate of a patient; help with simple prescribed exercises; keep patients' rooms neat; and help patients to move from bed, bathe, dress and groom. Occasionally, they may change nonsterile dressings and may assist with medical equipment.

Employment and Wage Data:

Home Health Aide

Tables 21 and 22 display information on current employment, employment to population ratios, wages and expected occupational growth for Home Health Aides in the San Diego region.

Aides typically also dress, bathe and provide skin care to patients; take patients' temperatures, pulse rates, respiration rates and blood pressure; and help them get into and out of bed and to walk. Aides observe patients' physical, mental and emotional conditions and report any change to nursing or medical staff. Nursing Aides employed in nursing-care facilities (nursing homes) often are the principal caregivers, having more contact with residents than do other members of the staff.

Table 21.
2006 Home Health Aide Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	3,890	132	8.86	18,428
Orange	4,040	135	10.01	20,820
Imperial	—	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Table 22.
2004–2014 Home Health Aide Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 1%	Top 10%	234
Orange	Top 1%	Top 10%	256
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Description: Nursing Aide

Nursing Aides perform routine tasks under the supervision of nursing and medical staff. Such tasks include answering patients' call lights, serving meals and helping patients to eat.

Employment and Wage Data: Nursing Aide

Tables 23 and 24 display information on current employment, employment to population ratios, wages and expected occupational growth for Nursing Aides in the San Diego region.

Table 23.

2006 Nursing Aide Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	6,930	236	11.17	23,233
Orange	7,860	262	10.61	22,068
Imperial	240	150	9.20	19,136

Source: California Employment Development Department, Labor Market Information Division

Table 24.

2004–2014 Nursing Aide Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 25%	Top 10%	228
Orange	Top 50%	Top 10%	263
Imperial	Top 50%	Top 30%	6

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Home Health Aide and Nursing Aides

Employment for Home Health Aides is projected to grow very rapidly during the coming decade, with the profession ranking in the top 1% of all occupations in both San Diego and Orange counties. (Data describing this workforce in Imperial County is not available). The actual number of employment opportunities is also projected to be significant, ranking in the top 10% of all occupations, in health care or otherwise. Data indicate that the size of the workforce is roughly equal in both counties for which data is available; estimated wages are slightly higher in Orange County.

The Nursing Aide workforce is not projected to grow rapidly in any of the region’s three counties. This forecast may be related to the relatively flat rate of growth in nursing home beds in the state. However, because

the Nursing Aide workforce is so large, even modest growth will translate into a significant number of job opportunities, which is the case in both San Diego and Orange counties where projected growth in employment for Nursing Aides ranks in the top 10% of all occupations (in health care or otherwise). Also, with turnover rates throughout the industry reportedly as high as 50% to 100% per year, this is an occupation with persistent need for labor. As with most of the other occupations presented in this report, the level of employment of Nursing Aides relative to that of the general population in Imperial County is substantially lower than it is in the other two counties in the region.

Education Data: Home Health Aide and Nursing Aide

Reliable student data describing Nursing Assistant or Home Health Aide training programs are not available. According to the

California Department of Health Services, there may be as many as 40 Home Health Aide training programs and as many as 90 Nursing Assistant programs in the region. In recent years only three schools in the San Diego region have reported student data describing graduates of Home Health Aide programs and three schools have reported student data describing graduates of Nursing Assistant programs.

The three schools reporting graduates of Home Health Aide programs in recent years are

- Maric College
- Miracosta College
- San Diego City College

The three schools reporting graduates of Nursing Assistant programs in recent years are

- Maric College
- Pacific College
- San Diego City College

Home Health Aide training programs are offered by a variety of providers. The state of California requires that Home Health Aides undergo 120 hours of training. Some students pursue a course of training that gives them dual certification as a Nursing Aide/Home Health Aide for a total of 160 hours of training. A previously certified Nursing Aide can become a certified Home Health Aide with an additional 40 hours of training. Analysis of the broad group of health care support occupations in the region indicates that this workforce is comparatively racially and ethnically diverse, being approximately 60% non-white (of which approximately 33% is Hispanic/Latino). It is likely that data

describing graduates of Home Health Aide programs, were it available, would mirror this composition. Nursing Aide training programs are also offered by a variety of providers. The state of California requires that Nursing Aides undergo 150 hours of training in order to become certified. Requirements are specified by the state³⁰. The racial/ethnic profile of this workforce, like that of Home Health Aides, is probably comparable to that of the broad group of health care support occupations.



LICENSED VOCATIONAL NURSE

Description

Licensed Vocational Nurses (LVNs) are licensed in the state by the California Board of Vocational Nursing and Psychiatric Technicians. LVNs care for the sick, injured, convalescent and disabled under the direction of Physicians and Registered Nurses. Most LVNs provide basic bedside care, taking vital signs such as temperature, blood pressure, pulse and respiration. They also collect samples for testing, perform routine laboratory tests, feed patients and record food and fluid intake and output. Experienced LVNs may supervise Nursing Assistants/Aides.

³⁰ Further details are available at <http://www.dhs.ca.gov/Inc/download/cert/CertificationFacts.pdf>

In California, LVNs also may administer prescribed medicines or start intravenous fluids. And in California, as in much of the country, LVNs make up the bulk of the nursing staff in nursing homes and long-term care facilities. They are less frequently employed in inpatient acute care settings.

Employment and Wage Data

Tables 25 and 26 display information on current employment, employment to population ratios, wages and expected occupational growth for Licensed Vocational Nurses in the San Diego region.

Summary of Labor Market Information: Licensed Vocational Nurse

Similar to the employment outlook for Nursing Assistants, employment

for Licensed Vocational Nurses is not projected to grow rapidly during the coming decade. However, because the absolute size of the workforce is relatively large, the projected number of annual employment opportunities in both San Diego and Orange counties ranks in the top 20% of opportunities for all occupations; in Imperial County the projected number ranks in the top 30%. Estimated wages for LVNs are highest in Orange County. The level of LVN employment relative to the population in Imperial County is roughly half of what it is in either of the other two counties of the region: LVN earnings are an estimated 75% of the earnings of LVNs working in Orange or San Diego counties.

Table 25. 2006 LVN Estimated Employment, Employment per Population, and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	4,660	158	19.66	40,892
Orange	4,540	151	21.12	43,929
Imperial	120	75	16.08	33,466

Source: California Employment Development Department, Labor Market Information Division

Table 26. 2004–2014 LVN Employment Projections/Rankings by County

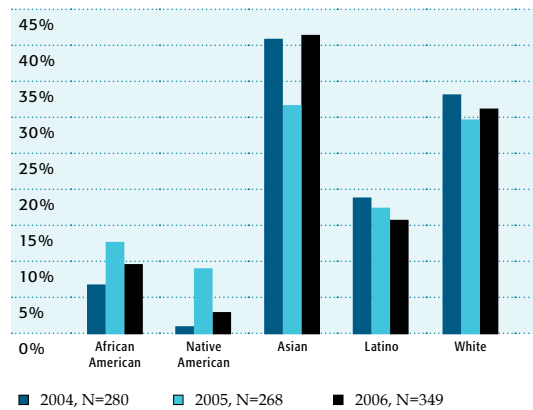
County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Bottom 50%	Top 20%	148
Orange	Bottom 50%	Top 20%	151
Imperial	Top 50%	Top 30%	5

Source: California Employment Development Department, Labor Market Information Division

Education Data

Figure 9.

2004–2006 Racial/Ethnic Composition for Reported Graduates of Licensed Vocational Nursing Programs: San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Licensed Vocational Nurse

Six schools reported graduates from LVN programs in 2006: three are regional community colleges and three are private for-profit institutions. According to the California Vocational Nursing and Psychiatric Technicians, there are 17 approved LVN programs in the San Diego region (12 of these are private for-profit, three are community colleges, and two are public, adult vocational programs). Approximately 85% of the total number of reported LVN graduates in 2006 graduated from private for-profit institutions. The gender composition of LVN graduates overwhelmingly favored women, but men have accounted for an increasingly

larger proportion since 2004. In 2004, men represented just 15% of the total number of reported graduates; in 2006, this proportion increased to 21%. Asians are the largest racial/ethnic group among LVN graduates. The overall racial/ethnic composition showed some variation during the past three years, with the numbers of Asian, African American and Native American graduates fluctuating from year to year.

REGISTERED NURSE PRACTITIONER

Description

Registered Nurse Practitioners (RNPs) are advanced practice nurses who work independently and in collaboration with Physicians. Other advanced practice nurses include Nurse-Midwives, Clinical Nurse Specialists and Nurse Anesthetists. Nurse Practitioners provide basic preventive health care to patients and they increasingly serve as primary and specialty care providers in medically underserved areas. In California some advanced practice nurses can prescribe medications. The most common areas of specialty for Nurse Practitioners are family practice, adult practice, women's health, pediatrics, acute care and gerontology. The Nurse Practitioner credential is a post-license certification regulated by the California Board of Registered Nursing. Approximately 6.6% of the current California-licensed RN workforce

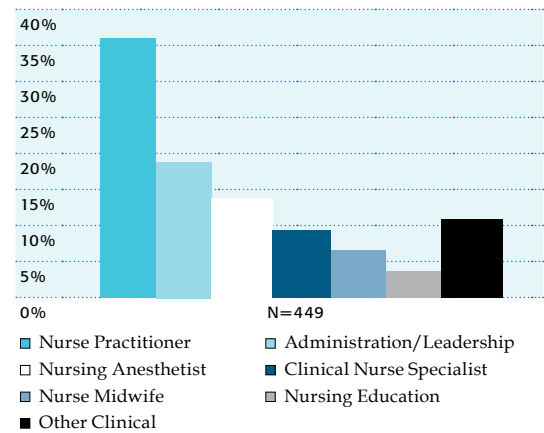
holds the NP certification.³¹ In 2004, a new regulation was chaptered into law establishing possession of a master’s degree in nursing as a requirement for certification as a Nurse Practitioner (AB 2226).³² According to Section 2835.5 of the Nursing Practice Act,³³ “on and after January 1, 2008, an applicant for initial qualification or certification as a nurse practitioner” must “possess a master’s degree in nursing, a master’s degree in a clinical field related to nursing, or a graduate degree in nursing.”

Wage data and employment projections data specifically describing Nurse Practitioners are not available. Nurse Practitioner education data used for this analysis come from the California Board of Registered Nursing Annual Schools Survey. These data have two main limitations: They are available for only a single year (2005), and they cannot be used to describe the gender or racial/ethnic composition of students in Nurse Practitioner programs. The second-best option is to use data describing graduates of Master of Science in Nursing (MSN) programs generally. Data from a 2005 census of total enrollment describe how MSN students are distributed across the different program concentrations, such as Nurse Practitioner.

Education Data

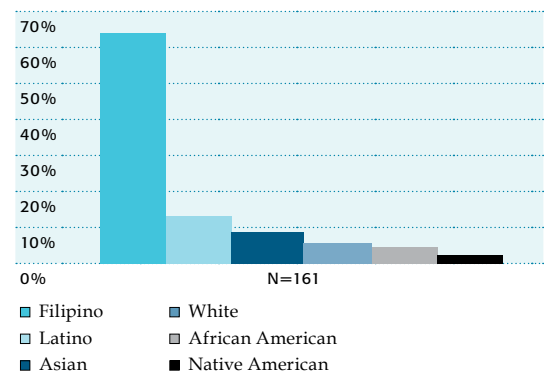
Figures 10 and 11 describe the 2005 distribution of students enrolled in Master of Science in Nursing (MSN) programs by concentration and describe the 2005 gender and racial/ethnic composition for reported graduates of MSN programs in the San Diego region.

Figure 10.
2005 Census of Total Enrollment in Post-License Master of Science in Nursing Programs by Program Concentration: San Diego Region



Source: California Board of Registered Nursing

Figure 11.
2005 Racial/Ethnic Composition of Reported Graduates of Master of Science in Nursing Programs: San Diego Region



Source: California Board of Registered Nursing

31 J. Spetz et al., Survey of Registered Nurses in California, 2006. Center for California Health Workforce Studies and School of Nursing, University of California, San Francisco. June 2007. Conducted on behalf of the California Board of Registered Nursing.
 32 <http://www.rn.ca.gov/leg/leg2004.htm#AB2226>
 33 <http://www.rn.ca.gov/npa/npa.htm>

**Summary of Education Data:
Registered Nurse/Nurse Practitioner**

There are four MSN programs in the San Diego region: C.S.U. Fullerton, Point Loma Nazarene University, San Diego State and the University of San Diego. C.S.U. Fullerton has the largest of the four programs, producing approximately two out of every three MSN graduates in the region. According to the 2005 census of total enrollment, approximately 36% of the students enrolled in regional MSN programs were pursuing training as a Nurse Practitioner. In 2005, roughly two out of every three graduates of the region’s MSN programs were women, and roughly two out of every three graduates were Filipino.



PHYSICIAN ASSISTANT

Description

Physician Assistants (PAs) practice medicine under the supervision of Physicians. They may be the principal care providers in rural or inner city clinics, where a physician is only present for one or two days each week.

Many PAs work in primary care specialties such as general internal medicine, pediatrics and family medicine. They are formally trained to provide diagnostic, therapeutic and preventive health care services as delegated by a physician. Working as members of a health care team, PAs take medical histories, examine and treat patients, order and interpret laboratory tests and x-rays and make diagnoses. In California PAs are licensed to prescribe medication when authority has been delegated by the supervising physician.

Employment and Wage Data

Tables 27 and 28 display information on current employment, employment to population ratios, wages and expected occupational growth for Physician Assistants in the San Diego region.

Table 27.
2006 Physician Assistant Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	470	16	39.39	81,931
Orange	340	11	39.59	82,347
Imperial	—	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Table 28.
2004–2014 Physician Assistant Employment Projections/ Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 1%	Bottom 50%	18
Orange	Top 5%	Bottom 25%	5
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Physician Assistants

The Physician Assistant workforce is comparatively small but is projected to grow rapidly. Estimated future PA employment is expected to be much larger in San Diego County than in Orange County³⁴ (there are no data available for Imperial County). However, estimated future earnings will be roughly equal in both counties. Because this is such a small workforce, the annual number of employment opportunities will be relatively few.

Education Data

Physician Assistant education programs are offered at both the undergraduate and graduate levels, leading to associate's degrees, baccalaureate degrees and master's degrees as well as to undergraduate and graduate certificates. Despite these differences, all programs qualify the graduate to be licensed as a Physician Assistant. Programs at the undergraduate level assume no formal degree beyond a high school diploma, whereas programs at the master's level require either an associate's degree or a baccalaureate degree. All programs require completion of a specific mix of coursework in the natural and social sciences prior to admission, and all require that applicants have documented patient-centered health care work experience. There are no Physician Assistant programs in the San Diego region. As PAs increasingly serve as primary care givers, especially in underserved areas, this could be a critical area for regional policy-makers to examine for potential program growth.



PSYCHIATRIC TECHNICIAN

Description

Psychiatric Technicians (Psych Techs) are licensed in the state by the California Board of Vocational Nursing and Psychiatric Technicians. They care for mentally impaired or emotionally disturbed individuals, following physician instructions and hospital procedures. Psych Techs monitor patients' physical and emotional well-being. They may also participate in rehabilitation and treatment programs, help patients with personal hygiene and administer oral medications and hypodermic injections. Workplace settings are most often psychiatric hospitals or mental health clinics. More recently Psych Techs have been employed in large numbers in mental health correctional facilities.

³⁴ According to the San Diego Workforce Partnership report, projected growth in opportunity for employment as a Physician Assistant in San Diego County is not expected to grow rapidly by comparison with other occupations, health care or otherwise. Our analysis is based on employment projections data published by the Employment Development Department (California); further information regarding the source of data used for the SD Workforce Partnership report is unknown.

Employment and Wage Data

Tables 29 and 30 display information on current employment, employment to population ratios, wages and expected occupational growth for Psychiatric Technicians in the San Diego region.

Imperial County), and that estimated wages in Orange County are also much higher than they are in San Diego County. Projections indicate that employment opportunities for Psych Techs during the coming decade will

Employment for Home Health Aides is projected to grow very rapidly during the coming decade, with the profession ranking in the top 1% of all occupations in both San Diego and Orange Counties.

Table 29.
2006 Psychiatric Technician Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	240	8	17.84	37,107
Orange	860	29	20.84	43,347
Imperial	—	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Table 30.
2004–2014 Psychiatric Technician Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Bottom 25%	Bottom 10%	5
Orange	Bottom 10%	Bottom 25%	14
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Psychiatric Technicians

Psychiatric Technicians comprise a comparatively small workforce. The data show that the level of employment for Psych Techs in Orange County is nearly four times what it is in San Diego County (there is no data available for

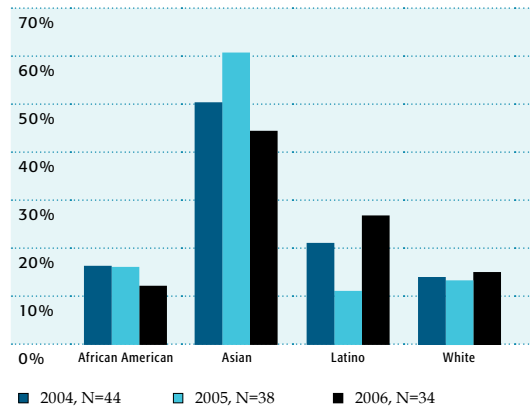
neither grow rapidly nor be numerous. Because Psych Techs work primarily in mental health hospitals or correctional institutions, their higher employment in Orange County is likely related to the greater number of establishments in Orange County licensed as Psychiatric and Substance Abuse Hospitals.³⁵

35 California Employment Development Department, Labor Market Information Division. *California Regional Economies Employment Series.*

There is one Psychiatric Technician training program in the San Diego region...

Education Data

Figure 12.
2004–2006 Racial/Ethnic Composition for Reported Graduates of Psychiatric Technician Programs: San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Psychiatric Technician

There is one Psychiatric Technician training program in the San Diego region, at Cypress College; it produces approximately 40 to 45 new graduates each year. Since employment levels for Psych Techs are comparatively high in Orange County, the region may need to import these professionals from other parts of the state. This situation is potentially an area to be examined for the need for program growth.

The gender composition of graduates is balanced between men and women; during the last three years women have constituted 50% to 55% of the reported graduates. There is no discernible trend in the distribution of graduates of Psychiatric Technician programs by race/ethnicity. Asians represented the largest single racial/ethnic group, but in the most recent year

of data (2006), the proportional difference between Asians and the next largest group of graduates (Latinos) was much smaller than the differences in the prior two years. In each year, race/ethnicity for three of the total number of graduates was unknown. There were no reported Native American graduates in the years 2004 to 2006.

Master’s-Level Trained Mental Health Counseling and Mental Health Social Work Professionals

The data describing employment levels, employment to population ratios, wages and employment projections for the selected mental health occupations refer to professionals trained at the master’s degree level (or higher). The occupations themselves are grouped as either counselors or social workers and are then further classified according to the type and setting of service. Unfortunately, data are not readily available that can describe graduates of master’s-level programs in social work or counseling in terms of the type of mental health services that they would be likely to provide or the setting in which they would provide the services. As a result, the correspondence between the mental health professions labor market and the educational program data is broad and indirect. Given the lack of detailed data describing

educational programs, the second-best option is to look at graduates of master's- and doctoral-level programs in clinical and counseling psychology that have an explicit objective to train mental health professionals. We have also looked at master's in social work (MSW) programs. We have organized the labor market data describing these occupations around the available education data. Labor market data describing workers in certain occupations who likely have received training in clinical and counseling psychology are paired with education data describing graduates of clinical and counseling psychology programs at the master's and doctoral level. Likewise, labor market data describing occupations of workers who probably have received training in social work are paired with education data describing graduates of master's in social work programs.

It is worth pointing out that the education data describing master's-level psychology programs indicate that such programs are increasingly oriented toward training Marriage and Family Therapists (MFTs). In the San Diego region, we were able to identify 13 distinct master's-level programs in clinical/counseling psychology with the objective of training mental health professionals; nine are oriented toward training MFTs. In the clinical/counseling psychology education data analysis that follows, we present separate figures describing graduates of doctoral programs, master's programs with a non-MFT orientation and master's programs with an MFT orientation.



MENTAL HEALTH COUNSELORS

Description

Mental Health Counselors work with individuals, families and groups to address and treat mental and emotional disorders and to promote optimum mental health. They are trained in a variety of therapeutic techniques used to address a wide range of issues including depression, addiction and substance abuse, suicidal impulses, stress management, problems with self-esteem, issues associated with aging, job and career concerns, educational decisions, issues related to mental and emotional health and family, parenting, and marital or other relationship problems. Mental Health Counselors often work closely with other mental health specialists such as Psychiatrists, Psychologists, Clinical Social Workers, Psychiatric Nurses and School Counselors.

Asians represent the largest racial/ethnic group among LVN graduates.

Employment and Wage Data

Tables 31 and 32 display information on current employment, employment to population ratios, wages and expected occupational growth for Mental Health Counselors in the San Diego region.

These findings suggest that either the workers represented by the sample data for each county perform different kinds of work, or a limited supply of labor is driving up wages in Orange County.³⁷

Table 31.
2006 Mental Health Counselors Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	1,040	35	16.27	33,841
Orange	720 [†]	24 [†]	21.31	44,324
Imperial	—	—	—	—

Source: California Employment Development Department, Labor Market Information Division
[†]2005 estimate of employment (2006 estimate of median wage)

Table 32.
2004–2014 Mental Health Counselors Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 10%	Top 50%	49
Orange	Top 50%	Top 50%	32
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Mental Health Counselors

The size of the Mental Health Counselor workforce is much larger in San Diego County than it is in Orange County (there is no data available for Imperial County), and this is likely related to the fact that there roughly twice as many outpatient mental health and substance abuse centers in San Diego County compared to Orange County.³⁶ However, estimated wages for this workforce in Orange County are much higher than they are in San Diego County.

Employment is projected to grow rapidly in San Diego County during the coming decade, but this is not the scenario expected in Orange County. Since the size of the workforce in San Diego County is much larger than it is in Orange County and since growth is projected to occur more rapidly in San Diego County, the projected number of annual job openings is greater in San Diego County than it is in Orange County. Still, given that this is a fairly small workforce, the projected number of job openings in these two counties ranks only in the top 50% when compared with the number of openings in all other occupations.

³⁶ California Employment Development Department, Labor Market Information Division. California Regional Economies Employment Series.

³⁷ Published standard errors indicate that these differences cannot be entirely explained by variance in the estimates.



SUBSTANCE ABUSE/BEHAVIORAL DISORDER COUNSELORS

Description

Substance Abuse/Behavioral Disorder Counselors assist people who suffer from problems related to alcohol, drugs, gambling and eating disorders. They counsel individuals facing addiction, helping them to identify underlying related behaviors. Counselors also conduct programs aimed at preventing addiction from occurring in the first place. Counseling sessions are designed for individuals, families or groups.

Employment and Wage Data

Tables 33 and 34 display information on current employment, employment to population ratios, wages and expected occupational growth for Substance Abuse/Behavioral Disorder Counselors in the San Diego region.

Table 33.

2006 Substance Abuse/Behavioral Disorder Counselor Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	410	14	15.92	33,113
Orange	410	14	16.74	34,819
Imperial	—	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Table 34.

2004–2014 Substance Abuse/Behavioral Disorder Counselor Employment Projections/ Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 20%	Top 50%	23
Orange	Top 25%	Bottom 50%	23
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

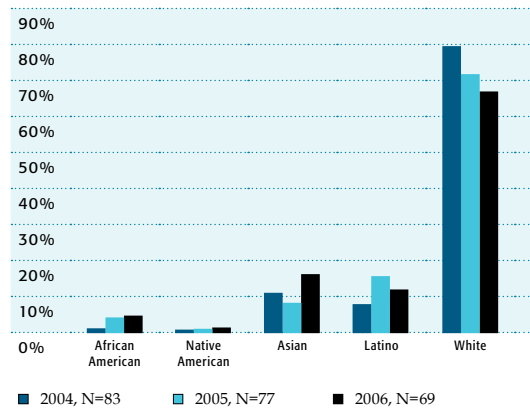
Summary of Labor Market Information: Substance Abuse/Behavioral Disorder Counselor

Estimates of the size of the respective Substance Abuse/Behavioral Disorder Counselor workforces in San Diego and Orange counties are identical, and their wages are at approximately the same level (there is no data available for Imperial County). The size of the workforce of counselors specializing in substance abuse/behavioral disorders is an estimated 40% to 50% of the size of the workforce for general mental health counselors. As is true for the general Mental Health Counselor, the Substance Abuse/Behavioral Disorder Counselor is faster-growing occupation in San Diego County than

in Orange County. Again, this is a small workforce, so the actual number of annual job openings is projected to be small.

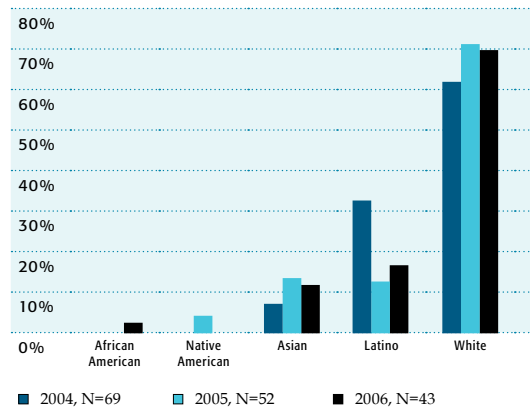
Education Data

Figure 13.
2004–2006 Racial/Ethnic Composition for Reported Graduates of Doctoral-Level Programs in Clinical or Counseling Psychology Programs: San Diego Region



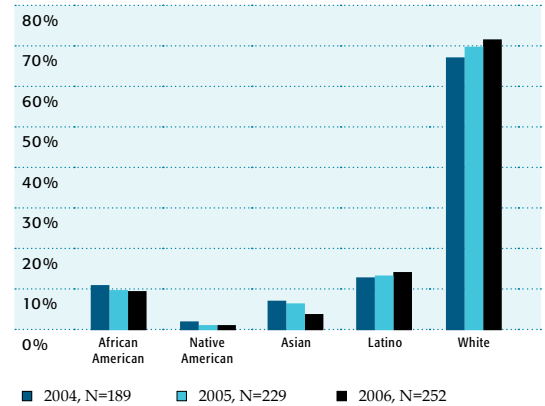
Source: Integrated Postsecondary Education Data System (IPEDS)

Figure 14.
2004–2006 Racial/Ethnic Composition for Reported Graduates of Master’s-Level Programs in Counseling Psychology Programs (Non-MFT Orientation): San Diego Region



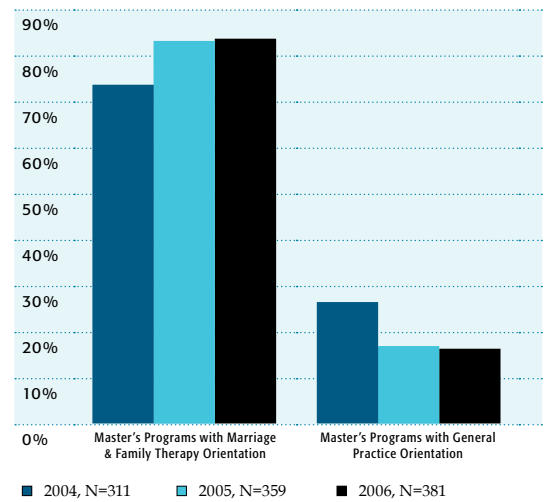
Source: Integrated Postsecondary Education Data System (IPEDS)

Figure 15.
2004–2006 Racial/Ethnic Composition for Reported Graduates of Master’s-Level Programs in Counseling Psychology Programs (MFT Orientation): San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Figure 16.
2004–2006 Distribution of Graduates of Master’s-Level Counseling Psychology Programs (MFT vs. Non-MFT Orientation): San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Clinical/Counseling Psychology

Analysis was limited to psychology programs at the doctoral and master's level with the stated objective of training mental health professionals. There are three doctoral-level programs³⁸ in the region that produce between 60 and 70 new graduates per year.³⁹ At the master's level there are 12 programs offering counseling psychology programs; eight of these programs are oriented toward licensure as a Marriage and Family Therapist (three of these programs are at institutions that have an explicitly Christian mission). Combined, these 12 programs produce between 350 and 400 graduates per year.

In both doctoral-level programs and master's-level counseling programs with an MFT orientation, approximately eight out of ten graduates were women; in master's-level programs with a general practitioner orientation, approximately seven out of ten graduates were women. During the past three years, there have been fewer reported graduates from doctoral-level programs each year. The data indicate that this situation was driven by declining numbers of white graduates; accordingly, white graduates represented an increasingly smaller proportion of the total number of graduates between 2004 and 2006 (but they still account for roughly two out of every three graduates).

The number of graduates from non-MFT master's programs has been also declining during the past three years, while the number of graduates from MFT master's programs has been increasing.

The 2006 racial/ethnic composition of non-MFT programs looks identical to the 2006 composition of programs with an MFT orientation; approximately seven out of ten graduates were white. But between 2004 and 2006, the number of reported Latino graduates from non-MFT programs declined dramatically (from 22 graduates in 2004 to seven graduates in 2006.) However, in 2006, race/ethnicity was not reported for approximately 33% of the total number of graduates from non-MFT master's-level counseling programs. This fact makes the comparison of the racial/ethnic composition of non-MFT programs with that of MFT programs problematic. It is not known whether the racial/ethnic composition of graduates of non-MFT programs in 2006 would have changed if a larger proportion of the total number of graduates identified by race/ethnicity had been reported.

In 2004 and 2005, there was not a single reported African-American graduate of a non-MFT program (there was one in 2006). In 2004 and 2006, there were no reported Native American graduates from non-MFT programs (there were two in 2005).

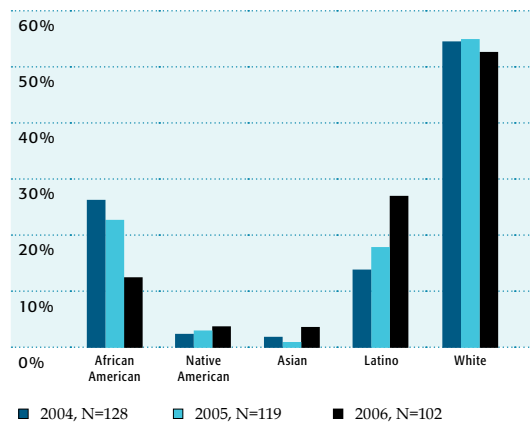
Although the labor market data presented above technically describe mental health counselors trained at the master's-degree level or higher, there is also a mental health counselor workforce consisting of paraprofessionals trained at the associate's-degree level. These occupations are most likely represented by much broader occupational groups, a situation that means these workers cannot be uniquely identified in the

38 One of these programs is a joint PhD program sponsored by U.C. San Diego and San Diego State University.

39 U.C. Irvine and U.C. San Diego (separate from the joint program with S.D.S.U.) have doctoral programs in psychology, but these programs are oriented toward producing academic researchers, not mental health practitioners. Neither of these programs offers a terminal master's degree.

available labor market data. However, there are education data that describe graduates of Substance Abuse/Addiction Counseling Programs who have been trained at the associate’s degree level. These data are presented below.

Figure 17.
2004–2006 Racial/Ethnic Composition of Graduates of Substance Abuse/Addiction Counseling Programs at the Associate’s Degree Level: San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Substance Abuse/Addiction Counseling (Associate’s Degree Level)

Five schools reported graduates of Substance Abuse/Addiction Counseling programs at the associate’s degree level in 2006. Four of the five were regional community colleges; the other was a private for-profit institution. The largest program was at San Diego City College, which has reported progressively fewer graduates each year since 2004. This decrease accounts both for the overall declining number of graduates as well as for the proportional shift in representation of African-American

graduates. In 2004 and 2005, the gender composition of graduates was balanced: approximately half of the graduates were men and half were women. The decline in the overall number of graduates in 2006 was the result of having fewer male graduates; in 2006, the gender composition was 60% women and 40% men. The racial/ethnic composition of graduates favored whites, who represented between 50% and 55% of the total each year. While the number of African-American graduates has been declining, the number of Latino graduates has been increasing. There has been a resulting shift in proportional representation by race/ethnicity.

MENTAL HEALTH/SUBSTANCE ABUSE SOCIAL WORKER

Description

Mental Health/Substance Abuse Social Workers are a subset of the general social work professions. These professionals focus on assessing and treating individuals with mental illness or substance abuse problems, including abuse of alcohol, tobacco or other drugs. Such services include individual and group therapy, outreach, crisis intervention, social rehabilitation and training patients in skills of everyday living. These workers also may help plan for supportive services to ease patients’ return to the community. Mental health and substance abuse social workers are likely to work in hospitals, substance abuse treatment centers, individual and family

services agencies or local government. These social workers may also be known as Clinical Social Workers.

Employment and Wage Data

Tables 35 and 36 display information on current employment, employment to population ratios, wages and expected occupational growth for Mental Health/Substance Abuse Social Workers in the San Diego region.

Mental Health Social Workers in Orange County is approximately equal to that of Mental Health Counselors; in San Diego County estimates indicate that there are roughly eight Mental Health Social Workers for every ten Mental Health Counselors. As was true for both Mental Health Counselors and Substance Abuse/Behavioral Disorder Counselors, employment opportunities for Mental Health Social Workers are

Table 35. 2006 Mental Health/Substance Abuse Social Worker Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	770	26	16.05	33,384
Orange	800	27	15.47	32,177
Imperial	—	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Table 36. 2004–2014 Mental Health Social Worker Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 10%	Top 50%	38
Orange	Bottom 50%	Bottom 50%	24
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Mental Health Social Workers

Estimates indicate that the respective Mental Health Social Worker workforces in San Diego and Orange counties are roughly equal in size and that wages are at roughly the same level. (No data is available for Imperial County.) The estimated size of the workforce for

projected to grow more rapidly in San Diego County than in Orange County. In fact, Mental Health Social Worker is projected to be one of the fastest-growing occupations in San Diego County during the next decade. Accordingly, the number of annual job openings is projected to be much greater in San Diego County than in Orange County.



MEDICAL/PUBLIC HEALTH SOCIAL WORKER

Description

Medical and Public Health Social Workers are typically trained at the master's degree level and work to provide individuals, families, or vulnerable populations with the psychosocial support needed to cope with chronic, acute, or terminal illnesses such as Alzheimer's disease, cancer and AIDS. They also advise family caregivers, counsel patients and help plan for patients'

needs after discharge by arranging for at-home services ranging from food delivery to oxygen equipment. Some work on interdisciplinary teams that evaluate certain kinds of patients, such as geriatric or organ transplant patients. Medical and Public Health Social Workers may work for hospitals, nursing and personal care facilities, individual and family services agencies or local governments. This unique group of workers may be trained in either social work or public health.

Employment and Wage Data

Tables 37 and 38 display information on current employment, employment to population ratios, wages and expected occupational growth for Medical and Public Health Social Workers in the San Diego region.

the workforce is comparable in size to that of Mental Health Social Workers. The size of this workforce in Imperial County is considerably smaller by comparison. However, there are substantial differences in the workforce’s estimated wages across

Table 37.
2006 Medical and Public Health Social Worker Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	750	25	23.83	33,384
Orange	910	30	24.40	50,752
Imperial	30	19	38.24	79,539

Source: California Employment Development Department, Labor Market Information Division

Table 38.
2004–2014 Medical and Public Health Social Worker Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 20%	Top 50%	31
Orange	Top 30%	Top 50%	32
Imperial	—	—	—

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Medical and Public Health Social Workers

Employment for Medical and Public Health Social Workers is projected to grow relatively rapidly in San Diego and Orange counties, ranking in the top 20% of all occupations in San Diego County and in the top 30% in Orange County (there are no projections data available for Imperial County). Estimated employment is slightly larger in Orange County than in San Diego County, but in both counties

the different counties in the region. Medical and Public Health Social Workers in San Diego County earn an estimated 66% of the salary of those working in Orange County and an estimated 40% of the salary of those working in Imperial County. This finding suggests that either the workers represented by the sample data for each county are performing different types of work, or a limited supply of labor is driving up wages in Imperial and Orange counties.⁴⁰

⁴⁰ Published standard errors indicate that these differences cannot be explained entirely by variance in the estimates.



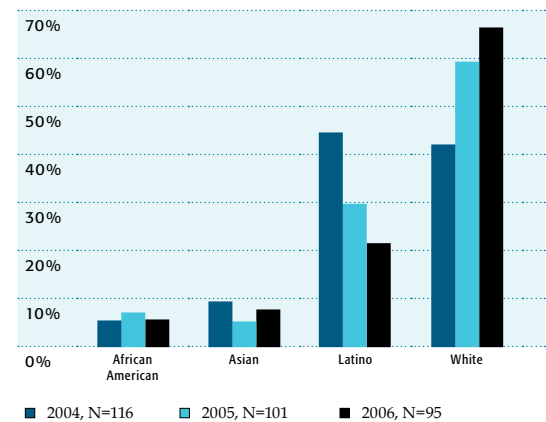
GERIATRIC SOCIAL WORKER

Description

One of the segments of the workforce that will play a critical role during the coming decade will be social workers who specialize in the field of geriatrics and aging. Unfortunately, data describing these professionals in California is very limited. On the labor market side, there is no good way to distinguish these professionals from others. We were only able to find one report⁴¹, which is national in scope and reports that approximately 9% of licensed social workers practice in the area of geriatrics or aging. Education data describing master's in social work (MSW) graduates of Gerontology/ Adult Aging and Development programs are presented below.

Education Data

Figure 18. 2004–2006 Racial/Ethnic Composition for Reported Graduates of Master's in Social Work Programs: San Diego Region



Source: Integrated Postsecondary Education Data System (IPEDS)

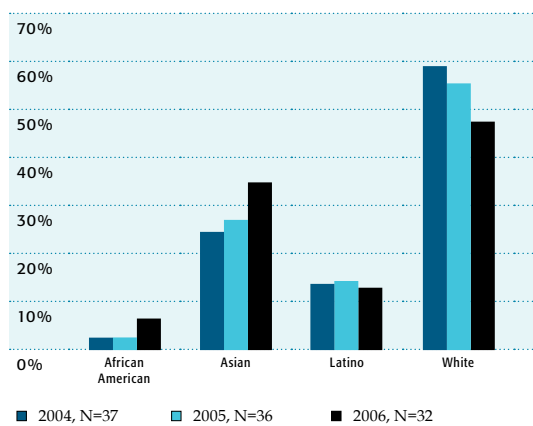
Summary of Education Data: Master's in Social Work

As of 2006, there was a single master's degree in social work program (MSW) in the San Diego region reporting student data, located at San Diego State University's main campus. However, Cal State Fullerton is in "pre-candidacy" for accreditation for an MSW program from the Council on Social Work Education. The data suggest that a master's level program at San Diego State's Imperial Valley campus was phased out after 2005, explaining the declining number of graduates generally. There are two factors that explain the declining proportional representation of Latino graduates: San Diego State no longer offers the program at the Imperial Valley campus, and an increasing number of white graduates of the MSW program at San Diego State's main campus. Data not shown here indicate that approximately eight out of ten MSW graduates were women.

⁴¹ Licensed Social Workers in the U.S., 2004. Center for Health Workforce Studies, School of Public Health, University of Albany.

Figure 19 describes the racial/ethnic composition for reported graduates of Gerontology and Adult Aging and Development programs in the San Diego region from 2004–2006.

Figure 19.
2004–2006 Racial/Ethnic Composition for Reported Graduates of Gerontology/Adult Aging and Development Programs: San Diego Region (All Degree Levels)



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Gerontology/Adult Aging and Development Programs

Education data presented in Figure 19 describes programs in Gerontology and Adult Aging and Development at the associate's, bachelor's and master's-degree level. There were five programs reporting graduates in 2006. Two of these programs, C.S.U. Fullerton and San Diego State, offer master's degrees (San Diego State also offers a bachelor's degree); two of the programs are associate's degree programs at regional community colleges; one is a post-baccalaureate certificate at a private four-year institution (Chapman University Extension). There have been from 40 to 45 new gradu-

ates of Gerontology/Adult Aging and Development programs during each of the past three years. Of these graduates, 60% completed a master's-level program; another 20% were graduates of bachelor's-level programs. The two master's-level programs were roughly equal in size. The gender composition of graduates heavily favored women: approximately eight out of ten graduates. Whites formed the largest racial/ethnic group of graduates, representing approximately 50% of the total. These data show a shift in racial/ethnic composition during the past three years during which the proportion of white graduates decreased and the proportion of Asian graduates increased. There are two factors driving this shift. One is an actual decline in the number of reported white graduates; the other is an increase in the number of reported graduates whose race/ethnicity is unknown. This information indicates that the compositional shift may simply be a statistical artifact.

Although quantitative information describing the state of geriatric social work education is largely unavailable, we did find information describing an effort to promote expertise in geriatrics and aging in social work education at both the baccalaureate and the master's level. These efforts are sponsored by the Council on Social Work Education. The Geriatric Social Work Initiative⁴² is a multifaceted program meant to prepare an aging-savvy social work workforce. Although the Initiative's mission includes educational preparation at the baccalaureate level, it appears that to date most of the programmatic work has been aimed at the master's level and higher.

⁴² More information on this program can be found at <http://www.gswi.org/>

Public and Community Health

In the section describing mental health professionals, we noted the difficulty in matching labor market data with education program data. This same difficulty pertains to the public/community health occupations targeted for analysis. Again, this means that we are only able to very broadly describe labor market conditions and educational training programs for the selected public/community health occupations. The selected occupations include Public/Community Health Educators and Medical/Public Health Social Workers. Data describing labor market conditions for Medical/Public Health Social Workers was presented previously. Data describing labor market conditions for Public/Community Health Educators is presented below.

Public/Community Health Educators are most likely trained in formal public health programs at the bachelor's, master's and doctoral levels. It is not precisely clear whether Medical/Public Health Social Workers are trained in Master's in Public Health (MPH) programs or Master's in Social Work (MSW) programs. (They may be trained in both types of programs.) Education data describing MSW programs was presented previously. Education data describing formal programs in public health are presented below. The data describing formal programs in public health mainly represent MPH programs; bachelor's and doctoral degree programs only account for 7% to 8% of the total number of graduates

in a given year. Obviously, the education data are limited by the fact that they are overly broad in representing the variety of public/community health occupations. They do not include detail that would help indicate the type of public/community health services that graduates would be likely to provide or the setting in which they would provide such services.



PUBLIC/COMMUNITY HEALTH EDUCATOR

Description

These are bachelor's- and master's-level trained professionals who work to promote, maintain and improve individual and community health by assisting individuals and communities to adopt healthy behaviors. They collect and analyze data to identify community needs prior to planning, implementing, monitoring and evaluating programs designed to encourage healthy lifestyles, policies and environments. They may also serve as a resource to assist individuals, other professionals or the community. In addition, they may administer fiscal resources for health education programs.

Employment and Wage Data

Tables 39 and 40 display information on current employment, employment to population ratios, wages and expected occupational growth for Public/Community Health Educators in the San Diego region.

Diego County is nearly twice what it is in Orange County. However, after adjusting for the size of the general population, the data indicate that there are nearly three times as many Public/Community Health Educators in Imperial County than there

Table 39.
2006 Public/Community Health Educator Estimated Employment, Employment per Population and Median Hourly/Annual Wage by County

County	Estimated Employment	Estimated Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
San Diego	930	32	17.16	35,692
Orange	500 [†]	17 [†]	26.60	55,328
Imperial	70 [†]	48 [†]	15.63	32,510

[†]2005 Estimate
Source: California Employment Development Department, Labor Market Information Division

Table 40.
2004–2014 Public/Community Health Educator Employment Projections/Rankings by County

County	Fastest Growth Rank	Most New Jobs Rank	Average Number of Job Openings/Year
San Diego	Top 25%	Top 50%	32
Orange	Top 50%	Bottom 50%	21
Imperial	Top 50%	Bottom 50%	2

Source: California Employment Development Department, Labor Market Information Division

Summary of Labor Market Information: Public/Community Health Educator

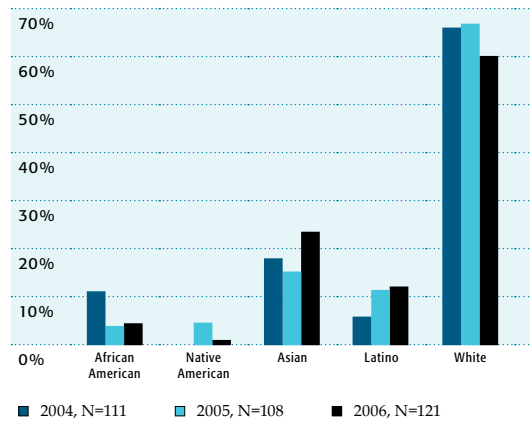
Employment for Public/Community Health Educators is projected to grow relatively rapidly in San Diego County (ranking in the top 25% of all occupations). This prediction is consistent with the projected growth for other social/community service occupations examined in this report. Growth in employment opportunity for this occupation is not projected to grow rapidly in either Orange or Imperial counties. The estimated size of this workforce in San

are in Orange County and roughly 1.5 times as many as there are in San Diego County. Median wages for this workforce are much higher in Orange County than they are in either San Diego or Imperial County; in San Diego and Imperial counties, the wages are estimated to be between 60% and 65% of the amount earned in Orange County. This finding suggests that either workers represented by the sample data for each county are performing different work, or a limited supply of labor is driving up wages in Orange County.⁴³

⁴³ Published standard errors indicate that these differences cannot be explained entirely by variance in the estimates.

Education Data

Figure 20.
2004–2006 Racial/Ethnic Composition for Reported Graduates of Public Health Programs: San Diego Region (All Degree Levels)



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Education Data: Public Health

There are three formal public health programs in the San Diego region. San Diego State offers a program at the master’s and doctoral level; C.S.U. Fullerton offers a master’s degree; Chapman University (University College) offers programs at the baccalaureate and master’s level. More than 90% of the students in these three public health programs are enrolled at the master’s level.

The program at San Diego State produces approximately 90 new MPH graduates each year. This figure represents about 65% of the total number of public health graduates in the region. The program at C.S.U. Fullerton is relatively new; it graduated its first full cohort of students in May 2007. (Data for the 2006–2007 academic year is not yet

available.) According to the program’s website, cohort size is scheduled to be 25 students per year. The master’s program at Chapman University also produces about 25 new graduates each year.

Approximately 85% of the region’s public health graduates from 2004 to 2006 were women. Between 60% and 65% of the region’s public health graduates were white. The racial/ethnic composition of these graduates has shifted very slightly over the past three years, driven by a small increase in the number of both Asian and Latino graduates.



COMMUNITY HEALTH WORKER AND HEALTH CARE INTERPRETER

Community Health Workers (CHWs) are not identified by available labor market data.⁴⁴ A recent national study⁴⁵ of the Community Health Workers, which used data from the 2000 Census, estimated that there were between 5,000 and 7,000 paid CHWs and another 3,000 volunteer CHWs in

44 The Office of Management and Budget (OMB) is considering creating a new Standard Occupation Classification (SOC) code for Community Health Worker, which would provide standardized and regular data collection on this workforce.

45 U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Community Health Worker National Workforce Study, March 2007.

California; the accuracy of these estimates has not been established. There are no good data describing wages for CHWs in California, but some local departments of public health employ a formal classification for Community Health Workers that has a stepwise career ladder. A current San Francisco Department of Public Health CHW job posting for someone with several years' experience listed the salary range as between \$22 and \$27/hour.⁴⁶ Data describing the demographic profile of CHWs in California is not available. The recent national study cited above found that women represented roughly 80% of the national CHW workforce and that the racial/ethnic composition of the national CHW workforce was comparatively diverse: white not Hispanic (39%), Latino (35%), African American (16%), Native American (5%) and Asian/Pacific Islander (5%).

Community Health Worker is an emerging occupation, and its job tasks and responsibilities vary depending on the workplace setting. CHWs typically function as part of a public health strategy to increase health care access for underserved communities, including limited-English speakers, new immigrant populations and the low-income population. CHW responsibilities may include educating clients about available community resources; disseminating information about health and lifestyle behaviors; advocating for community health needs; providing direct, basic health care procedures (first aid, blood pressure); and providing feedback to health care systems to improve service accessibility.

CHW education and training are often conducted on the job, but there are also formal programs, most of which offer a certificate. Community Health Works, which is based in the San Francisco Bay area, recently received a federal grant to establish a national model for an undergraduate program in community health. The concept is to develop a curriculum that will lead to a bachelor's degree in community health, which can then be used to establish undergraduate programs at college campuses across California and the rest of the nation. Although there are no available student data, we were able to identify three formal programs training Community Health Workers in the San Diego region:

- Community Health Worker Regional Development Center (part of the San Diego Border Area Health Education Center)
- San Diego City College (offering a certificate program)
- Latino Health Access (training Promotores)

Health Care Interpreters also are not identified by the available labor market data. A 2003 study of this workforce in California cited a claim by the California Health care Interpreters Association (CHIA) that there were probably fewer than 500 professional Health Care Interpreters working in the state at that time, and only a fraction of that workforce had been formally trained and was working full-time as an interpreter.⁴⁷ This same study cited a mean wage of roughly \$16 an hour, but it emphasized that "independent interpreters with outstanding credentials may command relatively

⁴⁶ <http://www.dph.sf.ca.us/employment/genljobs.htm#500Class>

⁴⁷ C. Dower, *Health Care Interpreters in California*, Center for the Health Professions, University of California San Francisco, 2003.

high salaries,⁴⁸ of as much as \$100 an hour. Unfortunately, there are no data to describe the demographic profile of this workforce, but since the essential job function is the ability to speak a non-English language, it is probably racially and ethnically diverse.

Health Care Interpreter is an emerging occupation, and its job tasks and responsibilities vary depending on the workplace setting. Generally, the role of the health interpreter is to serve as a conduit of information exchanged between medical staff and non-English-speaking patients. The interpreter's specific responsibilities may include ensuring that information pertaining to the patient's outpatient services and/or hospitalization is accurately communicated, seeing that the patient's questions and concerns regarding this information are appropriately addressed and documented, and providing interpreter services that convey the exact message rather than summarize the information in a way that is subjective.

As is the situation with Community Health Workers, there are no data available to describe recipients who receive formal training as Health Care Interpreters. According to the 2003 study cited above, the duration of formal programs ranges from 30 hours to more than 600 hours, but these programs most commonly are 40 hours. These programs typically cover roles and ethics, basic interpreting techniques, health and medical terminology and the role of cultural values in the experience of health care. We were able to identify two formal Health care Interpreter programs

in the San Diego region, each of which offers a 40-hour training certificate:

- Clinicas de Salud Del Pueblo (offers training in Brawley in Imperial County)
- Catholic Charities, Diocese of San Diego (San Diego)

Conclusion

The San Diego region's current population of just over six million people is projected to grow by about 1.6 million during the next 25 years. Strong overall population growth, as well as the projected increase in the proportion of the population of retirement age, is expected to create job opportunities in health care. Other factors expected to drive health care job creation include emerging medical technologies, regulatory shifts in scope of practice and changes in health care delivery settings (away from institutional-based care and into outpatient and home-based settings). Health care job creation will also be driven by the need to replace workers. In some entry level occupations (such as nursing assistant), turnover rates have been reported to be as high as 90% per year.

Roughly 95% of the projected population increase between 2005 and 2030 is expected to be in the Latino (75%) and Asian (20%) populations. Approximately 60% of the region's potential labor force in 2030 is projected to be either Latino or Asian. Among the region's population under the age of 18, Latinos are expected to become a majority group in each county by the year 2030. If birth rate and immigration

48 Ibid.

trends continue throughout this period, the region's pool of available labor beyond 2030 will become mostly Latino and Asian.

It is important that the San Diego region's younger population be aware of and prepared to enter allied health workforce occupations. Although we do not present data specific to the San Diego region, there is a growing "achievement gap" among high school graduates in the state that correlates with race, ethnicity and income.⁴⁹ Results from the 2006 California Standards Test show that Latino and African-American high school students are significantly less successful in both language arts and mathematics compared with their white and Asian peers, even after controlling for socio-economic disadvantages.⁵⁰ Other working age adults should also be prepared to enter allied health education and training programs. This need for preparation presents challenges in parts of the San Diego region where English proficiency is low.

Much of the projected job growth will be in entry-level, low-wage jobs requiring minimal education and training. These include health care support occupations such as nursing aides and home health aides. Estimates from the American Community Survey indicate that among these occupations, the region's workforce is already comparatively racially and ethnically diverse. The challenge for this sector of the workforce will be to address issues of worker retention and livable wages, and to invest in strategies that promote career growth and development. The 2006 report authored by the San

Diego Workforce Partnership, *Careers in San Diego's Health care Sector: A Healthy Future*,⁵¹ provides a concise outline of the different career development pathways unique to individual health occupations and is an invaluable tool for strategic workforce planning.

Other allied health workforce opportunities in the region that generally require preparation in one-to-two year certificate programs include Dental Assistant, Dental Hygienist, Medical Assistant and Pharmacy Technician. The key issues for these occupations are education readiness, access to programs and tuition costs. Access to educational programs includes factors such as geographic proximity, program enrollment capacity and the cost of tuition. Appendix D1 includes a roster⁵² of the regional educational providers and allied health programs offered. While the region's community colleges play an active role in educating allied health professionals, there are also many private schools and colleges that offer allied health education programs. Private schools providing entry-level training may offer program flexibility and easier access than regional community colleges. However, this may come at greater financial cost for the student.

State and private universities provide a number of programs at the baccalaureate level and master's degree level or higher. Key educational issues for the region are student access to these programs, affordability and articulation between programs that will allow for career growth. Analysis of workforce and

49 It is our assumption that these differences exist among high school students in the San Diego region as well.

50 Achievement Gap Fact Sheet: <http://www.cde.ca.gov/eo/in/se/agfactsheet.asp>

51 San Diego Workforce Partnership, 2006.

52 These are programs/providers that were identified by IPEDS completions data. There are other programs/providers in the region who are not reporting student data and are not readily identifiable.

education data reveal a lack of racial/ethnic diversity among the region's more highly educated allied health professions. Diversifying this segment of the region's allied health workforce is another key issue. There are real differences in the gender and racial/ethnic composition of the region's health professions workforce that correspond with differences in educational attainment and earnings. This lack of diversity has important economic implications because income correlates strongly with educational attainment. It also presents opportunities to work toward developing a culturally competent, regional health professions workforce.

The objective of this report is to help workforce professionals engage in a strategic effort to develop the San Diego region's allied health workforce. It is meant to provide some of the basic data describing key components of such an effort: the region's population (and potential pool of labor); the broader, current health professions workforce; and recent graduates of regional health professions education programs, who represent the potential pool of new entrants to the workforce. The overarching framework of the analysis presented concerns the racial and ethnic composition of these groups and the workforce implications of this composition.

This report should serve as both a point of entry into the broader discussion of health care workforce development for those new to the field and an updated benchmark for those long familiar with the complex issues that attend workforce planning. However, another important use of this report is to highlight the lack of available data describing the health professions workforce and health professions student bodies at the regional level, thereby limiting the ability to describe important relationships that exist between these groups and the region's population. It is our hope that it provides the needed data and information to support allied health workforce development in the San Diego region.

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Appendix A.

Detailed Listing of Occupations Represented by Broad Standard Occupation Code Groups Used in This Report

**SOC 21-1000:
Community & Social Service Counselors,
Social Workers and Specialists**

- Substance Abuse and Behavioral Disorder Counselors
- Educational, Vocational and School Counselors
- Marriage and Family Therapists
- Mental Health Counselors
- Rehabilitation Counselors
- Child, Family and School Social Workers
- Medical and Public Health Social Workers
- Mental Health and Substance Abuse Social Workers
- Health Educators
- Probation Officers and Correctional Treatment Specialists
- Social and Human Service Assistants

**SOC 29-1000:
Health Diagnosing & Treating Practitioners**

- Chiropractors
- Dentists
- Dietitians and Nutritionists
- Optometrists
- Pharmacists
- Physicians and Surgeons
- Physician Assistants
- Podiatrists
- Registered Nurses
- Audiologists
- Occupational Therapists
- Physical Therapists
- Radiation Therapists
- Recreational Therapists
- Respiratory Therapists
- Speech-Language Therapists

**SOC 29-2000:
Health Technologists & Technicians**

- Medical and Clinical Laboratory Technologists
- Medical and Clinical Laboratory Technicians
- Dental Hygienists
- Cardiovascular Technologists and Technicians
- Diagnostic Medical Sonographers
- Nuclear Medicine Technologists
- Radiologic Technologists and Technicians
- Emergency Medical Technicians and Paramedics
- Dietetic Technicians
- Pharmacy Technicians
- Psychiatric Technicians
- Respiratory Therapy Technicians
- Surgical Technologists
- Licensed Vocational/Practical Nurses
- Medical Records & Health Information Technicians
- Opticians, Dispensing

**SOC 31-0000:
Health care Support Occupations**

- Home Health Aides
- Nursing Aides, Orderlies and Attendants
- Psychiatric Aides
- Occupational Therapist Assistants and Aides
- Physical Therapist Assistants and Aides
- Dental Assistants
- Medical Assistants
- Pharmacy Aides

Appendix B1.

San Diego County: 2006 Estimated Employment, Employment per 100,000 Population and Hourly/Annual Wages by Occupation

Occupation	Estimated Employment	Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
Dental Assistant	3,420	116	16.37	34,050
Dental Hygienist	1,090 [†]	39 [†]	42.64	88,691
Medical Assistant	5,700	194	12.85	26,728
Pharmacy Technician	1,820	62	16.59	34,507
Clinical Laboratory Scientist	750	25	31.16	64,813
Home Health Aide	3,890	132	8.86	18,428
Nursing Aide	6,930	236	11.17	23,233
Licensed Vocational Nurse	4,660	158	19.66	40,892
Physician Assistant	470	16	39.39	81,931
Psychiatric Technician	240	8	17.84	37,107
Mental Health Counselor	1,040	35	16.27	33,841
Substance Abuse/Behavioral Disorder Counselors	410	14	15.92	33,113
Mental Health/Substance Abuse Social Worker	770	26	16.05	33,384
Medical/Public Health Social Worker	750	25	23.83	33,384
Public/Community Health Educator	930	32	17.16	35,692

Source: California Employment Development Department (Employment and Wages); American Community Survey (Population)

[†] 2005 Estimate

Appendix B2.

Orange County: 2006 Estimated Employment, Employment per 100,000 Population and Hourly/Annual Wages by Occupation

Occupation	Estimated Employment	Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
Dental Assistant	4,280	143	14.86	30,908
Dental Hygienist	2,600	87	39.54	82,243
Medical Assistant	5,260	175	13.61	28,308
Pharmacy Technician	2,030	68	15.37	31,969
Clinical Laboratory Scientist	1,210	40	32.20	66,976
Home Health Aide	4,040	135	10.01	20,820
Nursing Aide	7,860	262	10.61	22,068
Licensed Vocational Nurse	4,540	151	21.12	43,929
Physician Assistant	340	11	39.59	82,347
Psychiatric Technician	860	29	20.84	43,347
Mental Health Counselor	720 [†]	24 [†]	21.31	44,324
Substance Abuse/Behavioral Disorder Counselors	410	14	16.74	34,819
Mental Health/Substance Abuse Social Worker	800	27	15.47	32,177
Medical/Public Health Social Worker	910	30	24.40	50,752
Public/Community Health Educator	500 [†]	17 [†]	26.60	55,328

Source: California Employment Development Department (Employment and Wages); American Community Survey (Population)

[†] 2005 Estimate

Appendix B3.

Imperial County: 2006 Estimated Employment, Employment per 100,000 Population and Hourly/Annual Wages by Occupation

Occupation	Estimated Employment	Employment per 100,000 Population	Median Hourly (\$)	Median Annual (\$)
Dental Assistant	120	75	11.04	22,963
Dental Hygienist	—	—	—	—
Medical Assistant	200	125	10.69	22,235
Pharmacy Technician	90	56	16.03	33,342
Clinical Laboratory Scientist	—	—	—	—
Home Health Aide	—	—	—	—
Nursing Aide	240	150	9.20	19,136
Licensed Vocational Nurse	120	75	16.08	33,466
Physician Assistant	—	—	—	—
Psychiatric Technician	—	—	—	—
Mental Health Counselor	—	—	—	—
Substance Abuse/Behavioral Disorder Counselors	—	—	—	—
Mental Health/Substance Abuse Social Worker	—	—	—	—
Medical/Public Health Social Worker	30	19	38.24	79,539
Public/Community Health Educator	70 [†]	48 [†]	15.63	32,510

Source: California Employment Development Department (Employment and Wages); American Community Survey (Population)

[†] Estimate is from 2005.

Appendix C1.

San Diego County: Employment Projections 2004–2014 and Growth Rankings by Occupation

Occupation	Fastest Growth Ranking	Most New Jobs Rank	Average Number of Job Openings/Year
Dental Assistant	Top 10%	Top 10%	193
Dental Hygienist	Top 10%	Top 50%	36
Medical Assistant	Top 1%	Top 10%	283
Pharmacy Technician	Top 10%	Top 25%	72
Clinical Laboratory Scientist	Top 25%	Top 50%	33
Home Health Aide	Top 1%	Top 10%	234
Nursing Aide	Top 25%	Top 10%	228
Licensed Vocational Nurse	Bottom 50%	Top 20%	148
Physician Assistant	Top 1%	Bottom 50%	18
Psychiatric Technician	Bottom 25%	Bottom 10%	5
Mental Health Counselor	Top 10%	Top 50%	49
Substance Abuse/Behavioral Disorder Counselor	Top 20%	Top 50%	23
Mental Health/Substance Abuse Social Worker	Top 10%	Top 50%	38
Medical/Public Health Social Worker	Top 20%	Top 50%	31
Public/Community Health Educator	Top 25%	Top 50%	32

Source: California Employment Development Department

Appendix C2.

Orange County: Employment Projections 2004–2014 and Growth Rankings by Occupation

Occupation	Fastest Growth Ranking	Most New Jobs Rank	Average Number of Job Openings/Year
Dental Assistant	Top 20%	Top 10%	251
Dental Hygienist	Top 20%	Top 30%	69
Medical Assistant	Top 5%	Top 10%	295
Pharmacy Technician	Top 20%	Top 30%	70
Clinical Laboratory Scientist	Top 30%	Top 30%	61
Home Health Aide	Top 1%	Top 10%	256
Nursing Aide	Top 50%	Top 10%	263
Licensed Vocational Nurse	Bottom 50%	Top 20%	151
Physician Assistant	Top 5%	Bottom 25%	5
Psychiatric Technician	Bottom 10%	Bottom 25%	14
Mental Health Counselor	Top 50%	Top 50%	32
Substance Abuse/Behavioral Disorder Counselor	Top 25%	Bottom 50%	23
Mental Health/Substance Abuse Social Worker	Bottom 50%	Bottom 50%	24
Medical/Public Health Social Worker	Top 30%	Top 50%	32
Public/Community Health Educator	Top 50%	Bottom 50%	21

Source: California Employment Development Department

Appendix C3.

Imperial County: Employment Projections 2004–2014 and Growth Rankings by Occupation

Occupation	Fastest Growth Ranking	Most New Jobs Rank	Average Number of Job Openings/Year
Dental Assistant	Top 10%	Top 30%	6
Dental Hygienist	–	–	–
Medical Assistant	Top 5%	Top 20%	8
Pharmacy Technician	Top 15%	Top 50%	3
Clinical Laboratory Scientist	–	–	–
Home Health Aide	–	–	–
Nursing Aide	Top 50%	Top 30%	6
Licensed Vocational Nurse	Top 50%	Top 30%	5
Physician Assistant	–	–	–
Psychiatric Technician	–	–	–
Mental Health Counselor	–	–	–
Substance Abuse/Behavioral Disorder Counselor	–	–	–
Mental Health/Substance Abuse Social Worker	–	–	–
Medical/Public Health Social Worker	–	–	–
Public/Community Health Educator	Top 50%	Bottom 50%	2

Source: California Employment Development Department

Appendix D1.

San Diego County: Program and Institution Listing

Program and Institution	City
Clinical/Counseling Psychology (Doctoral)	
Alliant International University	San Diego
University of California San Diego	La Jolla
San Diego State University	San Diego
Clinical/Counseling Psychology (Master's)	
San Diego State University	San Diego
California State University–San Marcos	San Marcos
Clinical Laboratory Scientist	
University of California San Diego	San Diego
Clinical Microbiologist Scientist	
University of California San Diego	San Diego
Community Health Worker	
San Diego Border Area Health Education Center	San Diego
San Diego City College	San Diego
Dental Assistant	
Concorde Career Colleges	San Diego
Palomar College	San Marcos
San Diego Mesa College	San Diego
Pima Medical Institute	Chula Vista
Dental Hygiene	
Southwestern College	Chula Vista
San Diego State University	San Diego
Health Care Interpreter	
Catholic Charities, Diocese of San Diego	San Diego
Home Health Aide	
San Diego City College	San Diego
Licensed Vocational Nursing	
Maric College–East County	San Diego
Miracosta College	Oceanside
San Diego City College	San Diego
Southwestern College	Chula Vista

Appendix D1. (continued)*San Diego County: Program and Institution Listing*

Program and Institution	City
Marriage and Family Therapy (Master's)	
Alliant International University–San Diego	San Diego
Southern California Seminary	El Cajon
National University	La Jolla
University of Phoenix–San Diego Campus	San Diego
Master's in Social Work (MSW)	
San Diego State University	San Diego
Medical Assistant	
Academy of Professional Careers	San Diego
California College–San Diego	San Diego
CET–San Diego	San Diego
CET–Escondido	Escondido
Maric College–East County	San Diego
Maric College–North County	Vista
Miracosta College	Oceanside
Concorde Career Colleges	San Diego
Palomar College	San Marcos
San Diego Mesa College	San Diego
Pima Medical Institute	Chula Vista
Valley Career College	El Cajon
Advanced Training Associates	El Cajon
Glendale Career College–Oceanside	Oceanside
Nursing Aide	
Maric College–East County	San Diego
Miracosta College	Oceanside
Pharmacy Technician	
Academy of Professional Careers	San Diego
Maric College–North County	Vista
Pima Medical Institute	Chula Vista
Valley Career College	El Cajon

Appendix D1. (continued)*San Diego County: Program and Institution Listing*

Program and Institution	City
Public Health	
San Diego State University	San Diego
Registered Nurse Practitioner	
Point Loma Nazarene	San Diego
San Diego State University	San Diego
University of San Diego	San Diego
Substance Abuse/Addiction Counseling	
San Diego City College	San Diego

Appendix D2.

Orange County: Program and Institution Listing

Program and Institution	City
Clinical Chemist	
Quest Diagnostics Nichols Institute	San Juan Capistrano
Clinical/Counseling Psychology (Doctoral)	
Argosy University–Orange County	Santa Ana
Clinical/Counseling Psychology (Master’s)	
California State University–Fullerton	Fullerton
Clinical Cytogeneticist Scientist	
Genetics Center	Orange
Genzyme Genetics	Orange
Quest Diagnostics Nichols Institute	San Juan Capistrano
US Labs	Irvine
Clinical Genetic Molecular Biologist	
Ambry Genetics Corporation Lab	Aliso Viejo
Quest Diagnostics Nichols Institute	San Juan Capistrano
Clinical Laboratory Scientist	
University of California Irvine	Orange
Clinical Microbiologist Scientist	
Quest Diagnostics Nichols Institute	San Juan Capistrano
University of California Irvine	Orange
Community Health Worker	
Latino Health Access	Santa Ana
Dental Assistant	
Cypress College	Cypress
Orange Coast College	Costa Mesa
Concorde Career College	Garden Grove
Bryman College	Anaheim
Dental Hygiene	
Cypress College	Cypress

Appendix D2. (continued)

Orange County: Program and Institution Listing

Program and Institution	City
Gerontology	
Coastline Community College	Fountain Valley
Saddleback College	Mission Viejo
California State University-Fullerton	Fullerton
Chapman University-University College	Orange
Licensed Vocational Nursing	
Pacific College	Costa Mesa
Stanbridge College	Irvine
Marriage & Family Therapy (Master's)	
Chapman University	Orange
Hope International University	Fullerton
Vanguard University of Southern California	Costa Mesa
Argosy University-Orange County	Santa Ana
Medical Assistant	
Orange Coast College	Costa Mesa
Santa Ana College	Santa Ana
Saddleback College	Mission Viejo
South Coast College	Orange
Concorde Career College	Garden Grove
Intercoast Colleges	Orange
Bryman College	Anaheim
Maric College-Anaheim	Anaheim
Newbridge College	Santa Ana
CET-Santa Ana	Santa Ana
Pacific College	Costa Mesa
Career Networks Institute	Costa Mesa
American Career College	Anaheim
College of Information Technology	Fullerton
Nursing Aide	
Pacific College	Costa Mesa

Appendix D2. (continued)

Orange County: Program and Institution Listing

Program and Institution	City
Pharmacy Technician	
Santa Ana College	Santa Ana
Bryman College	Anaheim
American Career College	Anaheim
Psychiatric Technician	
Cypress College	Cypress
Public Health	
California State University-Fullerton	Fullerton
Chapman University-University College	Orange
Registered Nurse Practitioner	
California State University-Fullerton	Fullerton
Substance Abuse/Addiction Counseling	
Cypress College	Cypress
Saddleback College	Mission Viejo
Intercoast Colleges	Orange

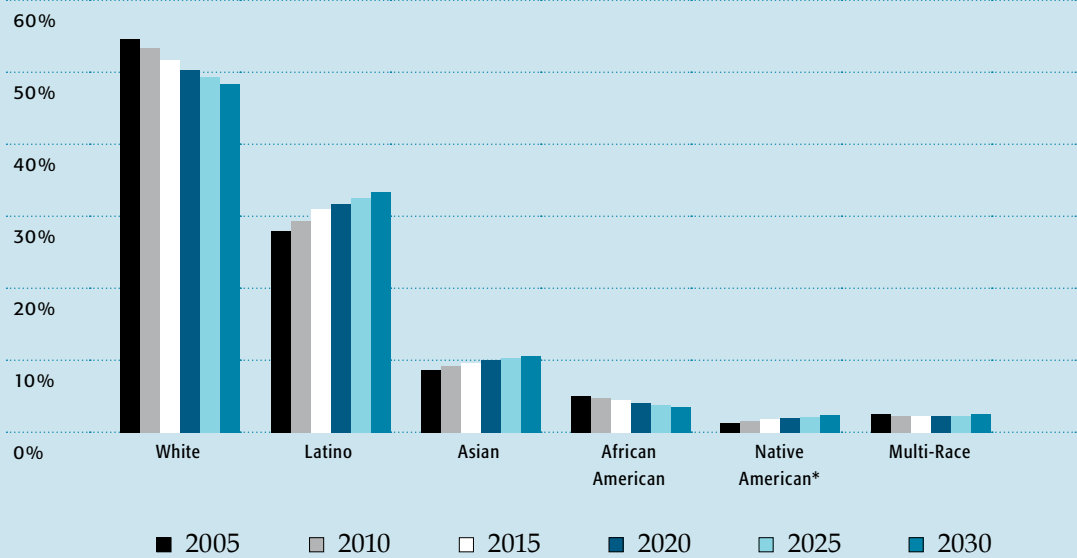
Appendix D3.

Imperial County: Program and Institution Listing

Program and Institution	City
Health Care Interpreter	
Clinicas de Salud del Pueblo	Brawley
Medical Assistant	
Imperial Valley College	Imperial
Substance Abuse/Addiction Counseling	
Imperial Valley College	Imperial

Appendix E.
Population Projections by County

Figure E-1.
 2005–2030 Projected Population by Race/Ethnicity: San Diego County



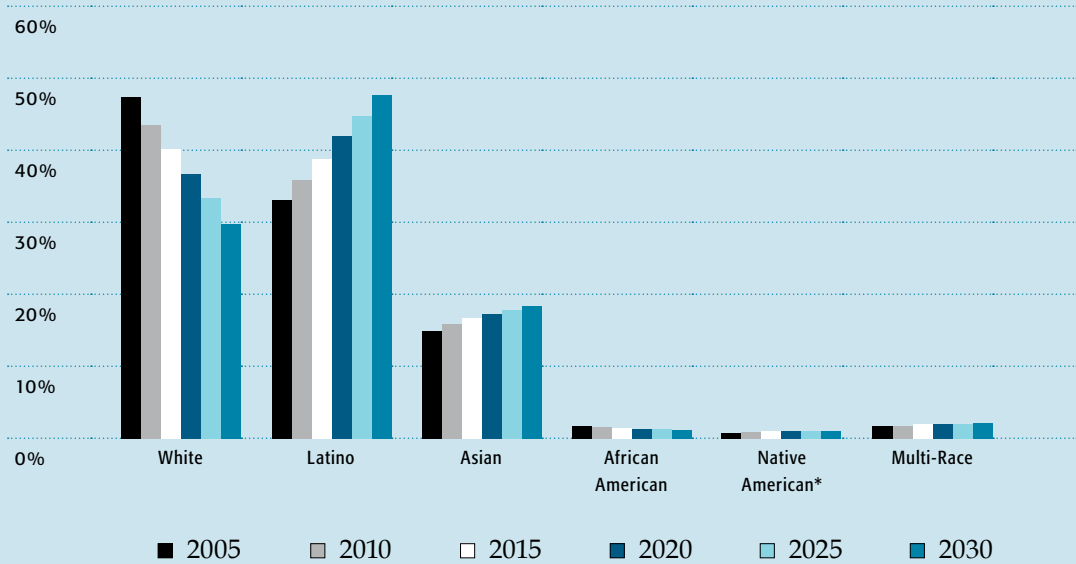
Source: California Department of Finance, Demographic Research Unit

* Because of small numbers, the Native American category aggregates estimates for the American Indian/Alaska Native population and the Native Hawaiian/Pacific Islander population.

Figure E-1 demonstrates that there are county-level differences in the ways that the racial and ethnic composition of the population is projected to change during the coming decades. Region-wide projections show Latinos representing the largest racial/ethnic group by 2030. However, within San Diego County, Latino population growth will be much more modest. Although there is a projected shift in proportional representation, the white population is actually projected to continue to grow in San Diego County and to remain the largest racial/ethnic group within San Diego County during the next 25 years.

Appendix E. (continued)
 Population Projections by County

Figure E-2.
 2005–2030 Projected Population by Race/Ethnicity: Orange County



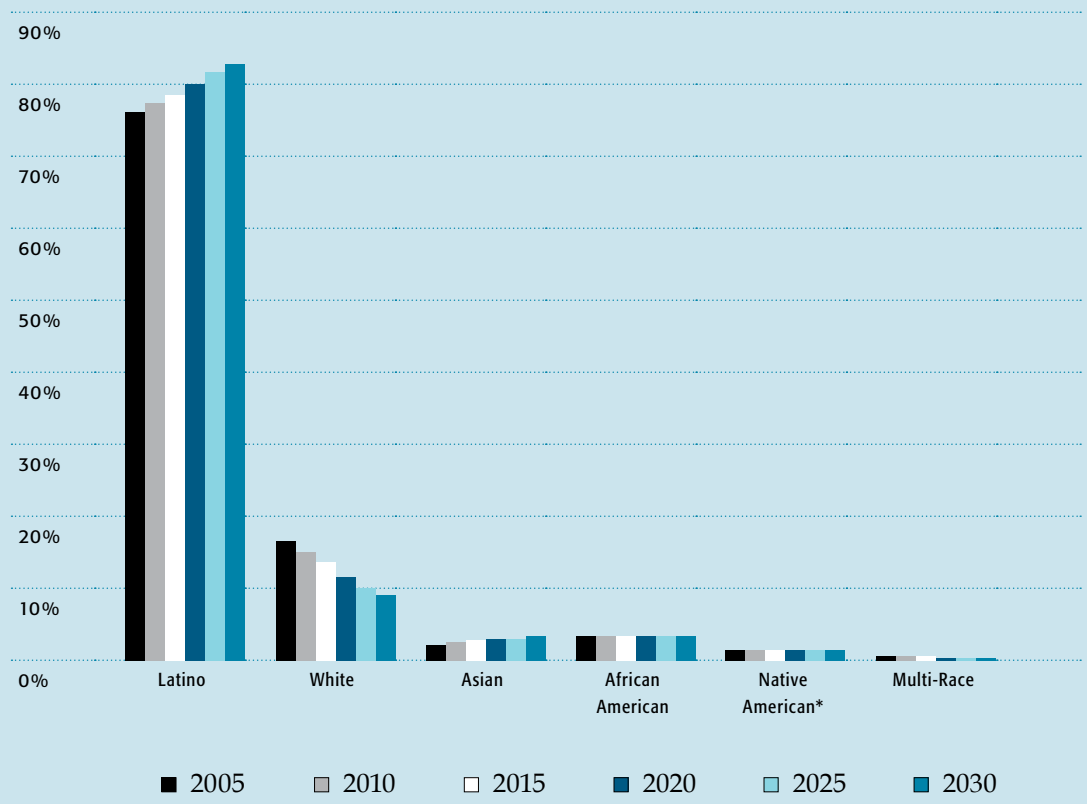
Source: California Department of Finance, Demographic Research Unit

*Because of small numbers, the Native American category aggregates estimates for the American Indian/Alaska Native population and the Native Hawaiian/Pacific Islander population.

The overall demographic change to the region’s population projected to occur between 2005 and 2030 will be experienced most dramatically in Orange County. In 2005, Latinos represented approximately 33% of the general population. By 2030, it is projected that they will represent roughly 48% of the population in Orange County. It is clear that this dramatic change will be the main driver behind the aggregate demographic shift in the region as a whole.

Appendix E. (continued)
Population Projections by County

Figure E-3.
 2005–2030 Projected Population by Race/Ethnicity: Imperial County



Source: California Department of Finance, Demographic Research Unit

*Because of small numbers, the Native American category aggregates estimates for the American Indian/Alaska Native population and the Native Hawaiian/Pacific Islander population.

The population of Imperial County was an estimated 75% Latino in 2005; by 2030, it is projected that approximately 83% of the general population will identify as Latino.

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1000 North Alameda Street
Los Angeles, CA 90012
www.calendow.org

PREPARED BY:

UCSF Center for the Health Professions
3333 California Street, Suite 410
San Francisco, CA 94118
<http://futurehealth.ucsf.edu>

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