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Allied Health Regional Workforce Analysis Sacramento/Northern California Region

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Table of Contents

APPENDICES

LIST OF TABLES

LIST OF FIGURES

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, therapeutic, and 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.

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 in each of The California Endowment regions: The general population, which represents 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. Although the analysis for these reports is multifaceted, a key theme that is highlighted throughout is the racial/ethnic composition of these workforce components. 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 Sacramento/ Northern California Region, a geography that encompasses nearly the entire northern half of the state and includes 26 different counties. For most of the report, we've divided the region in two. One sub-region covers the geography just north of the Bay Area and the greater Sacramento metropolitan area and includes the following counties: Sonoma, Napa, Solano, Yolo, Sacramento, Placer and El Dorado. We refer to this region as the *Greater Sacramento Region*. The second sub-region includes the following counties: Del Norte, Humboldt, Mendocino, Lake, Trinity Siskiyou, Modoc, Lassen, Plumas, Sierra, Nevada, Shasta, Colusa, Glenn, Tehama, Butte, Yuba, Sutter, and Alpine. We refer to this region throughout the report as the *Northern California Region*. These divisions hold for most of the analysis presented in this report. The exception is the section describing recent graduates of allied health education programs, where the geographic unit of analysis covers the entire 26-county region.

Twenty-two (22) 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 often 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 educational preparation ranges from certificate programs that can be completed in less than one year to 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
- Home Health Aide
- Nursing Assistant
- Licensed Vocational Nurse

- Nurse Practitioner (Advanced Practice Nurse)
- Physician Assistant
- Respiratory Therapist
- Radiologic Technologists
- EMT/Paramedic
- Clinical Laboratory Scientist
- Psychiatric Technician
- Mental Health Counselor
- Substance Abuse/Behavioral Disorder Counselor
- Mental Health/Substance Abuse Social Worker
- Medical/Public Health Social Worker
- Geriatric Social Worker
- Public/Community Health Educator
- Community Health Worker
- Health Care Interpreter

Principal Data Sources

Regional Population

The principal sources of data used to describe the region's current and projected population (over the period 2005-2030) were the California Department of Finance's Demographic Research Unit, and the American Community Survey (ACS) Public Use Microdata Sample (PUMS) for California. In some cases, American Community Survey (ACS) PUMS data from 2006 alone were used, but in other instances PUMS data from both 2005 and 2006 were combined in order to perform more detailed analysis. The estimates presented using this combined dataset should be interpreted as averages over the two-year period of 2005-2006.

Characteristics of the Current Health Professions Workforce

The principal sources of data used to describe the Sacramento/Northern California Region's current health professions workforce were the 2005 and 2006 American Community Survey (ACS) Public Use Microdata Sample (PUMS) for California. PUMS data from the 2005 and 2006 American Community Survey were combined for the Sacramento/Northern California Region in order to obtain a larger number of observations, thus allowing analysis that is more detailed. As noted above, the estimates presented using this combined dataset should be interpreted as averages over the two-year period of 2005-2006.

Education

All student data were derived from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS). IPEDS is the most comprehensive source for postsecondary education data available. Though schools occasionally mistakenly report graduates of a program that they do not actually offer, we have made every reasonable effort to verify the existence of a program for which student data were reported.

Current and Projected Employment and Median Wages

The occupational estimates of total employment, occupational estimates of hourly/annual wages, and occupational employment projections come from the California Employment Development Department (EDD). These labor market data are presented in as much geographic detail as possible. In some cases, data are available at the county level, but in other cases data represent metropolitan statistical areas (MSA) (which may include multiple counties), or multi-county economic regions.[1]

1 These data come from the California Employment Development Department, Labor Market Information Division and are released to the public already aggregated.

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 (BLS).

Major Findings

Major findings are presented for each main section of the report. 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. Together these findings present a rich and detailed picture that can be used as a basis for regional allied health workforce planning.

Current Population

The more populous Greater Sacramento Region is more racially/ethnically diverse than the Northern California Region. Latinos, Asians, African Americans, and Native Hawaiians/Pacific Islanders all represent larger proportions of the general population. Roughly 90% of Asians, African Americans, and Native Hawaiians/Pacific Islanders in the broader 26-county Sacramento/Northern California Region live in the Greater Sacramento Region. Furthermore, 70% of all Asians, 77% of all Native Hawaiians/Pacific Islanders, and 87% of all African Americans live in just two counties: Sacramento and Solano. In contrast, Native Americans are represented in greater numbers throughout the Northern California Region. However, in both regions, the younger population is more diverse.

The proportion of the total population identified as White declines by 10% among the population segment ages 18 or younger.

Data indicate that the general population of the Northern California Region has lower levels of educational attainment by comparison with the Greater Sacramento Region. These data show that in both regions, Asians are the most highly educated population group, and that educational attainment among African Americans and Native Americans is well below average. However, many of the key findings from analysis of the region's current population concern the conditions of being Latino. In both the Greater Sacramento and the Northern California regions, Latinos are younger, less well educated, earn substantially lower wages, and are far more likely to be linguistically isolated as limited English speakers.

- The median age of the Latino population is 26 years old in the Greater Sacramento Region and 25 years old in the Northern California Region. This group is several years younger by comparison with the African American population (29/28) and the Native Hawaiian/Pacific Islander population (31)[2] and much younger by comparison with the Asian population (33/36), Native American population (37/32) and White populations (both 40/42).

- Over the period 2005-2006, more than 40% of Latinos over the age of 18 in the broader Sacramento/Northern California Region reported speaking English either "not well" or "not at all". This has important implications for the delivery of health care services, for participation in the health care workforce, and for academic success in allied health education programs.

- Among the population over the age of 25 in both regions, Latinos lag well behind all other racial/ethnic groups in terms of educational attainment. In the Greater Sacramento Region, just 19% of Latinos reported having attained an associate's degree or higher, compared with the region-wide average of 39%. In the Northern California Region, 14% of Latinos over the age of 25 reported having earned an associate's degree or higher compared with the region-wide average of 32%.

- The median wage for Latinos is much lower in comparison to other groups. Over the period 2005-2006, half of all Latinos in the Greater Sacramento Region earned $28,000 per year or less; in the Northern California Region, Latino median income was $23,000 per year. These earnings estimates are $5,000-$7,000 per year lower by comparison with African Americans and Native Americans; $8,000-$9,000 per year less compared with Asians; and approximately $10,000-$14,000 per year less compared with Whites.

This focus on the region's Latino population is not meant to overlook the economic and educational status of the region's Native American or African American populations.[3] In terms of earnings and educational attainment, these groups also lag behind the region's White and Asian populations. However, the statistical evidence indicates that the gaps are more profound for Latinos.

Projected Population

The Greater Sacramento Region is projected to grow by roughly 1.1 million people over the next two decades (this is slightly above the average projected growth

2 The sample size was too small to generate a median age estimate for the Native Hawaiian/Pacific Islander population in the Northern California Region.

3 Because of their small population size and thus the small number of sample observations, the social and economic circumstances of the Native Hawaiian/Pacific Islander population in either region are not easily described. Our hypothesis is that this population group also compares unfavorably to the regions' White and Asian populations, but more robust data is needed in order to confirm this.

rate for the state). Over one-half of this population growth is expected to occur in two counties: Sacramento and Solano. The racial/ethnic composition of the region's population will shift dramatically between 2005 and 2030. Latino population growth will represent over one-half of the region's total population growth. It is expected that by 2030, the region's White population will no longer represent a majority.

The Northern California Region is projected to grow by roughly 50% between 2005 and 2030 (a growth rate well above the state-wide average of 33%). Half of this population growth is expected to result from growth in three counties: Butte, Sutter and Yuba. Sutter and Yuba counties rank 1st and 2nd in the projected, fastest-growing counties in California over this period. Although White population growth is projected to be strong overall, several counties in the Northern California Region will experience significant changes in racial/ethnic composition. In both Sutter and Yuba counties, the size of the Latino population is projected to triple between 2005 and 2030, and in both Lake and Tehama counties, it is projected to more than double. In addition, Native American population growth is expected to be very strong in Del Norte, Humboldt, and Mendocino counties.

The other population phenomenon, occurring in both regions (as it is across the state) is tremendous growth in the proportion of the population over the age of 65. Across the Greater Sacramento Region, the size of the population ages 65 and older is projected to more than double between 2005 and 2030. In all but Napa County, this segment of the population is projected to grow at a rate three to four times faster than the general population. In the Northern California Region, the population over the age of 65 is projected to grow four times as fast as the general population in Lassen, Mendocino, Nevada, and Plumas counties; eight times as fast in Humboldt County; and 16 times as fast in Alpine County. Several counties in the Northern California are also expected to experience declines in the under-17 population.

The racial/ethnic composition of the region's population will shift dramatically between 2005 and 2030. Latino population growth will represent over one-half of the region's total population growth.

Policy Implications of Population Data

One of the concerns over the population's shifting age demographics is the impact it will have on the workforce. A growing dependency ratio (a greater proportion of older dependent adults) would be expected to tax systems and infrastructure financed by economic productivity, including social services and public health systems. It may also change the mix and type of human resources needed to care for the dependent population, including the need for allied health workers to provide services in acute and long-term care settings and in the home.

Much of the anticipated growth will be in the Latino and Asian population groups. This implies that many future allied health workers will be drawn from these two groups. It will be important to address English speaking ability and education readiness for these populations in order to develop an adequate allied health workforce.

Current Health Professions Workforce

Analysis of the regions' current health professions workforce shows that men comprise one-third or less of the workforce.

It also shows a similar pattern of racial and ethnic diversity among men in these professions as seen in other regions of the state. Higher paying occupations, with more extensive educational requirements, are much less racially and ethnically diverse than are entry-level, low-paying occupations. Latino, Native American, and African American workers are often overrepresented in these low-paying, entry-level jobs.

We used the composition of the general labor force as a benchmark to analyze the representation of specific groups (race/ethnicity; gender) in the region's current health professions workforce.

Greater Sacramento Region

- Latinos are underrepresented in each of the broad occupational groups. However, this underrepresentation is most pronounced among Diagnosing and Treating Practitioners and Healthcare Technologists and Technicians. These two occupational groups typically require greater levels of training and include the highest income-earning healthcare occupations.

- Native Americans and African Americans are underrepresented among the highest paid, most highly educated segment of the health professions workforce: Diagnosing and Treating Practitioners and Healthcare Technologists and Technicians

- White and Asian health care workers are concentrated in higher income health professions. On average, they earn roughly $25,000 per year more than non-White/ non-Asian health professionals.

- Collectively, White (74%) and Asian (15%) health care workers represent almost 90% of the region's health care workers holding a master's degree or higher.

- African American and Latino health care workers are concentrated in occupations that are at the low end of the wage scale.

Northern California Region

- Latinos are underrepresented in all of the broad occupational groups, but it is most pronounced among Diagnosing and Treating Practitioners (which includes the highest income-earning occupations).

- White health care workers are disproportionately represented among Diagnosing and Treating Practitioners and Healthcare Technologists and Technicians.

- Asian health care workers in the region are disproportionately represented among the most highly paid health care occupations: Diagnosing and Treating Practitioners.

- Native American health care workers are underrepresented among Diagnosing and Treating Practitioners and Healthcare Technologists and Technicians, and are the least well paid among health care workers in the region.

- Collectively, White (79%) and Asian (12%) health care workers represent over 90% of the region's health care workers holding a master's degree or higher.

Other Key Findings

We found that over half of Asian health care workers in the broader Sacramento/Northern California Region identified as Filipino. The data suggest that the Asian Indian, Hmong, Laotian, Vietnamese and Korean populations are underrepresented among the region's health professions workforce. Workforce recruitment and training programs could be targeted toward certain these Asian populations in order to increase their representation in the region's health care workforce.

In addition, foreign-born Asians are much better represented in the health professions workforce compared with foreign-born Latinos. Just over 70% of the broader region's Asian general labor force is foreign-born while 80% of the broader region's Asian, health care workers are foreign-born. Foreign-born Asians are well represented in the health professions workforce. In contrast, more than half of the Latino general labor force in both the Greater Sacramento Region and the Northern California Region is foreign-born, but foreign-born Latinos represent just 27% of Latino health care workers in the Greater Sacramento Region and 22% of Latino health care workers in the Northern California Region.

Recent Graduates of Allied Health Professions Education Programs

There are several key findings from the analysis of data describing graduates of the region's health professions education programs. Graduates of entry-level health education programs are more diverse in comparison to graduates of advanced degree programs, or programs where admission is more competitive. Underrepresentation in programs leading to an advanced degree, and where admissions are competitive, is most pronounced among Latino and Native American students.

As with the currently employed workforce, recent graduates of the selected allied health education programs tend to be predominately women (upwards of 90% of the total). The programs where men are best represented (one-quarter to one-third of the total number of graduates) include: Pharmacy Technician, Respiratory Therapy, Radiologic Technology, Psychiatric Technician, and Master's level Clinical/Counseling Psychology. The only allied health profession in which men represent a majority of the graduates (roughly 70%) is EMT/Paramedic.

Another key finding is that, according to reported data, training for entry-level occupations, such as Medical Assisting

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and Dental Assisting, is concentrated in 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. A single year of education in a private, for-profit institution can cost in excess of $20,000 per year, compared with the roughly $1,200 per year it costs to attend a California community college. Strategies to develop the region's allied healthcare workforce should address this issue. Regional workforce planning groups could utilize the information on the supply of educational programs that is appended to this report to examine whether capacity and geographic access to training is adequate for the region.

Finally, access to allied health educational opportunities is not evenly distributed across the broader region. There are four counties in the Northern California Region where we did not find any training programs for the selected allied health occupations: Alpine, Colusa, Sierra, and Trinity counties. Additionally, in six counties of the Northern California Region, Nursing Assistant/Aide and Home Health Aide were the only available training programs identified. These are sparsely populated counties which are likely to experience a significant aging of the population in the coming decades. Combined with limited educational opportunities, these conditions may present challenges in recruiting workers to fill positions in key allied health occupations.

Racial/Ethnic Underrepresentation in Selected Allied Health Education Programs

We compared the race/ethnicity of the general labor force as a benchmark to students in the selected allied health education programs. These data describe the entire Sacramento/Northern California Region and are not disaggregated into the two sub-regions. In determining whether a specific racial/ethnic group is underrepresented in a selected educational program, it is important to keep in mind that proportional representation in the general labor force is just a benchmark.

The following education programs did not have reliable student data that could be used to describe the racial/ethnic composition of recent graduates: Home Health Aide; Nursing Assistant/Aide; Physician Assistant; Clinical Laboratory Scientist; Master's level Public Health; Community Health Workers; and Health Care Interpreter. Analysis of the racial/ethnic representativeness of these programs is not included here.

Reported data indicated that students were underrepresented in particular allied health programs as follows:

- Dental Hygiene: Native American and African American students.
- Pharmacy Technician: Native American students.
- Master of Science in Nursing (Nurse Practitioner): Latino and Native American students.

- Respiratory Therapy: Latino and Native American students.

- Radiologic Technology: Latino, African American, and Native American students.
- EMT/Paramedic: White students represent as much as 85% of the total number of graduates from the region's community colleges. Students from all other racial/ethnic groups are underrepresented.

- Psychiatric Technician: African American and Native American students.

- Master's level Clinical and Counseling Psychology: Latino, African American, and Native American students.

- Substance Abuse Counseling (Associate's degree level): Latino and Asian students

Native Americans represent a very small proportion of the broader Sacramento/Northern California region's population and labor force (approximately 1.1% region-wide; 0.7% in the Greater Sacramento Region; 2.1% in the Northern California Region). Such small numbers present a challenge to determining how well Native American students are represented. In some cases, a single Native American graduate may equal 1% - 2% of the total number of graduates. Under such circumstances, we could claim that Native Americans are well represented, but this glosses over the fact that out of 100 graduates, only one student identified as Native American.

For certain programs, and in certain years, not a single reported graduate was identified as Native American, including:

- Dental Hygiene
- Master's of Science in Nursing (Nurse Practitioner)
- Respiratory Therapy
- Radiologic Technology
- Psychiatric Technician
- Master's level Clinical or Counseling Psychology

Employment Opportunity

Employment opportunity correlates strongly with the absolute size of the workforce: The larger the workforce, in general, the

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greater the opportunity for employment. Geographic areas that are more populous have larger labor markets, which in turn translates into greater opportunity for employment. Population centers in the Greater Sacramento Region are considerably larger by comparison with the Northern California Region, which means that the absolute number of job opportunities in the Greater Sacramento Region is greater.

The aging of the population is expected to have an impact on the type of occupations that have more new job growth. For example, Nursing Assistants/Aides and Home Health Aides, and to a lesser extent Licensed Vocational Nurses are frequently employed in the long term care field including nursing homes and home care services. These occupations are expected to be the biggest sources of employment opportunity across most of the Greater Sacramento Region. (In Napa County, projected opportunities among these occupations are not quite as strong by comparison)

Projections also indicate that employment will be strong for certain mental health occupations: Mental Health/Substance Abuse Social Workers in Sonoma County; Psychiatric Technicians in Napa County; Mental Health Counselors in Solano County, and the greater Sacramento metropolitan area. Other occupations expected to be comparatively strong sources of employment opportunity (in the greater Sacramento metropolitan area) include Clinical Laboratory Scientist and Radiologic Technologist. Given the region's current limited capacity to train Clinical Laboratory Scientists (CLS), employment projections suggest that demand will be unmet.

Across the Northern California Region, most job opportunity is concentrated in the entry-level support occupations, including Home Health Aide, Nursing Assistant/Aide, Medical Assistant, and Dental Assistant. The exception to this is a comparatively large number annual openings projected for EMTs/Paramedics in the North Coast region. As noted above, the relationship between population and labor market size and employment opportunity means that the more populous areas of this region (Butte and Shasta counties) will offer greater opportunity for employment. In the less populous parts of the region, for many of the selected allied health occupations, the number of projected openings number fewer than 10 per year. It's also important to recognize that, for these rural regions, projections are made for an entire region, not a single county. Limited training opportunities in the rural parts of the Northern California Region, make it a challenge to recruit and retain even the small number of professionals needed.

Summary of Major Findings

One of the key issues to emerge from this analysis of the Sacramento/Northern California Region's population, healthcare workforce, and graduates of the region's selected healthcare education programs is the disparity in representation that broadly divide Latinos, Native Americans

and African Americans from Whites and Asians. The data are not sufficient to identify whether such disparities may also affect the region's Native Hawaiian/Pacific Islander population. These limitations also point out that categories of race/ethnicity obscure important characteristics of the cultural and linguistic identity of the populations they describe.[4]

The factors that might be considered causative with respect to these findings are complex. Racial/ethnic groups are dynamic populations that encompass many different languages and cultural heritages. It is plausible that certain groups within these broad categories are disproportionately affected by economic privation, low levels of education, or even display a tendency not to work in allied healthcare occupations. The data used to produce this report do not include the kind of detail needed to explore many of these possibilities. There is extensive literature exploring the intersection of social, economic, and health status and race/ethnicity, but a review of this literature is beyond the scope of this report.

In the context of social and economic conditions of the region's general population, Latinos represent a special case in important ways. They are much younger in comparison to other population groups, median wages are much lower, levels of educational attainment are much lower, and a significant portion of the region's Latino population over the age of 18 reports speaking 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 healthcare needs and to develop its allied healthcare workforce.

In the context of the region's current healthcare workforce, Latino, Native American, and African American healthcare workers are concentrated in the segment of the healthcare workforce that consists of mainly low paying, entry-level occupations. The racial/ethnic composition of the different broad occupational groups supports this finding, as does the educational attainment profile and the wage earning profile of healthcare workers identified by race/ethnicity.

In the context of the region's current healthcare workforce, Latino, Native American, and African American healthcare workers are concentrated in the segment of the healthcare workforce that consists of mainly low paying, entry-level occupations.

Data describing recent graduates of health professions education programs in the region corroborate the data describing the region's health professions workforce. Latino, Native American, and African American students are best represented in those training programs that lead to low paying, entry-level healthcare positions. Many of these are programs that can be completed in less than one year and may or may not lead to a credential, such as certification. These programs are most frequently offered by 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.

Policy Implications for Regional Allied Health Workforce Planning

Useful policies and programs should focus on recruiting underrepresented students into healthcare occupations that involve greater educational investment and finding ways to assist current healthcare workers to

4 For example, in a forthcoming report funded by The California Endowment, "The Well-being of Indigenous Farmworkers", nearly two dozen different languages spoken by indigenous Mexican populations are identified.

progress through established career ladders into higher paying healthcare occupations. There are no readily available sources of data describing career ladder programs, such as their location, which career paths they serve, or the extent to which they are accessed by workers. Other than small pilot programs, little is known about the success of career ladder programs. The development of standard and achievable career ladders is a critical component of regional workforce planning. Education, industry, and local workforce agencies can utilize this data and report to understand where the opportunities lie to develop meaningful employment and career development in the allied health field.

The presence of training opportunities is another important factor to consider in workforce planning and development. For example, there is only a single Physician Assistant training program (located at UC Davis) for the entire Sacramento/Northern California region. Physician Assistants are a critical part of the community clinic system that provides access to care for much of rural, Northern California. Regional workforce planning groups need to consider whether the supply of educational programs, in terms of capacity and geographic access to training, is adequate for the region.

An equally important factor in strategic workforce development is the shifting age demographic that will dramatically affect parts of the Northern California Region. This can be expected to create demand for healthcare professionals with geriatric expertise. There is also a need to develop an "aging savvy" social and mental health workforce to meet current and future demand for mental health services.

Allied health occupations will offer a great deal of opportunity for employment across the Sacramento/Northern California Region. It is true that the greatest number of opportunities will come in the form of entry-level occupations that are near the bottom of the wage scale. However, there are also many mid-level occupations that offer entry into practice with a two-year associate's degree and for which the regional employment outlook is strong, particularly in the more populous parts of the region.

Entry-level allied health care workers are already comparatively diverse. Strategies should focus on attracting Latino, Native American, African American, and underrepresented Asian groups to higher-level education programs, including continuing to recruit these students into the region's associate degree education programs. A coordinated approach is needed to identify and support programs that assist entry-level incumbent workers advance along established career ladders. Finally, regional workforce planners need to consider the adequacy of the current supply of educational training programs, including their cost and geographic distribution, as well as their capacity. The data and analysis presented in this report is meant to help guide education, industry, and workforce professionals as they plan for these kinds of strategic decisions.

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, therapeutic, and 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.

This 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 TCE-designated Sacramento/ Northern California Region, the general population, the current health professions workforce, and the graduates of 22 selected allied health education programs. These occupations were selected based on several criteria, including 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 also 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 may be occupations with a workforce that is large in size and growing relatively rapidly. These occupations 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 TCE-designated Sacramento/Northern California Region covers a geography that encompasses nearly the entire northern half of the state of California and includes 26 different counties. For this reason we've divided the broader region into two sub-regions, and where the data permit, conducted analysis on each sub-region separately. One sub-region covers the geography just north of the Bay Area and the Greater Sacramento area and includes the following counties: Sonoma, Napa, Solano, Yolo, Sacramento, Placer, and El Dorado. We refer to this region as the *Greater Sacramento Region*. The second sub-region includes the following counties: Del Norte, Humboldt, Mendocino, Lake, Trinity Siskiyou, Modoc, Lassen, Plumas, Sierra, Nevada, Shasta, Colusa, Glenn, Tehama, Butte, Yuba, Sutter, and Alpine. We refer to this region throughout the report as the *Northern California Region*. As noted, these divisions hold for most of the analysis presented in this report. The exception is the section describing recent graduates of allied health education programs, where the geographic unit of analysis covers the entire 26-county region.

This report begins with an examination of selected demographic and economic characteristics of the current and projected population, which serves as context for looking at the current workforce and post-

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 yrs)
Pharmacy Technician	Certificate (1–2 yrs)
Home Health Aide	Certificate (<1 yr)
Nursing Assistant/Aide	Certificate (<1 yr)
Licensed Vocational Nurse	Certificate (1–2 yrs)
Nurse Practitioner (Advanced Practice Nurse)	Master's Degree
Physician Assistant	Certificate (2 yrs)/Associate's/Master's Degree (depending on previous education and experience)
Respiratory Therapist	Associate's Degree
Radiologic Technologist	Certificate or Associate's Degree (1–2 yrs)
EMT/Paramedic	Certificate (1–2 yrs)
Clinical Laboratory Scientist	Post-baccalaureate Certificate
Psychiatric Technician	Certificate (1–2 yrs)/Associate's Degree
Mental Health Counselor	Master's/Doctoral Degree
Substance Abuse/Behavioral Disorder Counselor	Certificate (2 yrs)/Associate's/Bachelor's/Master's Degree
Mental Health Social Worker	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

secondary educational pipeline. This is followed by a brief section that describes characteristics of the region's current health professions workforce. It's important to note that analysis of individual occupations in individual counties is not possible because of data limitations. As a result, this section presents data describing broader groups of occupations that are defined by the *Standard Occupational Classification* system.

The remainder of the report is a description and analysis of labor market and education data for the 22 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. Although the analysis for this report is multifaceted, a key theme highlighted throughout is the racial/

ethnic composition of these basic workforce components: population, current health professions workforce, and the post-secondary educational pipeline.

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

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 constrain the level of analysis that can be conducted. First, as noted above, 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 or individual counties. The number of sample observations available in the American Community Survey (ACS) is too small to produce estimates at that level of detail. As a result, occupations needed to be aggregated into larger groups and the geographic units of analysis are the two sub-regions designated for the purpose of this report: the Greater Sacramento Region and the Northern California Region.

Second, there are cases where only a general relationship between employment data and education program data exists. 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 balance precisely 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 move to 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.[5] 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.

It is important to note that labor market data are less extensive for occupations that have a self-employment component, where either workers themselves, or their employer is considered self-employed. Examples of this include mental health professionals in private practice or physicians and dentists with private practices that employ Medical Assistants or Dental Assistants. This is an issue particularly for the employment projections, where estimates of the annual number of job openings due to growth and turnover may be biased downward because of the lack of data from employer surveys used to develop employment projections.

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 (N) in a given year is likely an underestimate of the total number of actual graduates. For other education programs, student data are either poorly reported or not reported at all. For example, data describing graduates of Home Health Aide programs are unavailable. When this is the case, we cannot report on the demographic profile of graduates. We also remind the reader that occasionally, schools mistakenly report graduates of a program that they do not actually offer. We have made every effort to verify the existence of a program when student data were reported for it (short of combing through the program catalog for every reporting college, university, or other post-secondary institution). All education programs that reported data are listed in Appendix E.

Using and Interpreting the Data

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. They also suggest that certain subpopulations within the broader population categories may be underrepresented (e.g., Asian subpopulation groups). For example, data from the American Community Survey (ACS) indicate that the Asian Indian, Vietnamese, Hmong, and Laotian populations are broadly underrepresented among Asians in the region's health care workforce.

The data describing education program graduates indicate how different racial/ethnic groups are distributed as potential new entrants into the workforce. Estimates of employment and wages describe the wide variation in both workforce size and level of earnings across allied health occupations,

5 For example, see *The 2007 Fresno County Employment Study* produced by the Fresno County Workforce Investment Board available at: http://www.workforce-connection.com/index.cfm

and across the geographic region. 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 region. These findings are intended to guide workforce planning and to identify geographic 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. For each selected occupation, we included 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 openings due to the need to replace workers. As noted above, one of the limits of the employment projections data is that their coverage of occupations that have a self-employment component is less extensive. This may have the effect of understating the annual number of job openings for occupations such as Medical Assistant and Dental Assistant, who frequently work for self-employed physicians and dentists.

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, Native Hawaiian/Pacific Islander, and Latino. The category of Latino ethnicity includes people of any race who self-identify as either Hispanic or Latino. "Other race" is a formal category used by the American Community Survey (ACS); however, almost all of the observations identified as "Other race" are also identified as Hispanic or Latino. In this report, the category often functions as a way to represent groups when their numbers of observations in the data are too few to generate meaningful estimates. We remind the reader that both Latino and Asian are very broad categories that obscure the variety of cultural and linguistic backgrounds they represent. The available data do not allow us to disaggregate the category of Latino. However, whenever possible we present detailed data that describes the region's many Asian subpopulations.

In the section that describes 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. However, we do include the total number of graduates reported in these figures, whether or not race/ethnicity was identified. It appears in parentheses underneath the total number used to calculate graduates' racial/ethnic composition. 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
American Community Survey (ACS) White, Asian, African American, Hispanic or Latino, Native American, Native Hawaiian, Other Pacific Islander, Multirace, Some other race
Integrated Postsecondary Education Data System (IPEDS)† White, Asian (includes Native Hawaiian/other Pacific Islander), African American, Native American/Alaskan, Hispanic or Latino
California Department of Finance White, African American, Hispanic or Latino, Asian, Native American, Native Hawaiian/Other Pacific Islander, Multirace

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

Demographic and Economic Characteristics of the Regional Population

The following figures and tables present data describing the features of the region's current population, as well as projected changes to the region's future population.

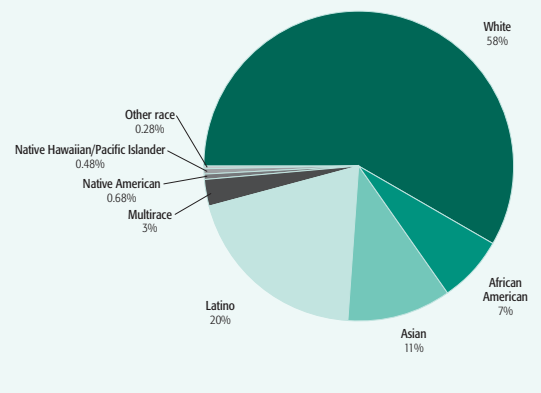
Table 3.
2006 General Population Totals by County: Sacramento/Northern California Region

County	Total Population
Greater Sacramento Region	3,103,000
Northern California Region	1,400,000

Table 3 shows how the Sacramento/Northern California Region's general population of roughly 4.5 million people is distributed across the two sub-regions we created for the purposes of this report. Approximately two-thirds of the greater region's population lives in the Greater Sacramento Region, which includes Sonoma, Napa, Solano, Yolo, Sacramento, El Dorado, and Placer counties.

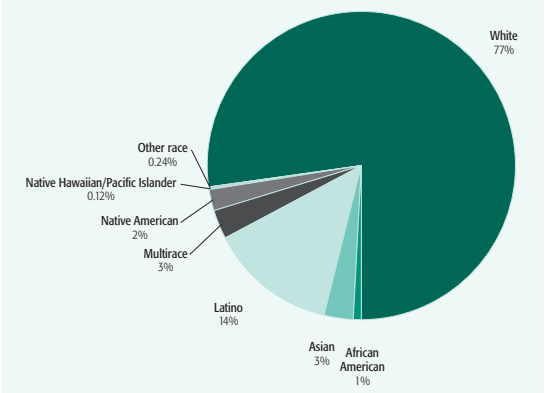
Figures 1 and 2 illustrate the differences in racial/ethnic composition between the two sub-regions. The more populous Greater Sacramento Region is considerably more racially/ethnically diverse. The Latino, Asian, African American, and Native Hawaiian/Pacific Islander populations all represent larger proportions of its general population by comparison with the Northern California Region. In contrast,

Figure 1.
2006 General Population by Race/Ethnicity: Greater Sacramento Region



Source: 2006 American Community Survey, PUMS
** Other race includes anyone who did not identify as a member of one of the major race/ethnicity groups, or chose not to disclose race/ethnicity.*

Figure 2.
2006 General Population by Race/Ethnicity: Northern California Region



Source: 2006 American Community Survey, PUMS
** Other race includes anyone who did not identify as a member of one of the major race/ethnicity groups, or chose not to disclose race/ethnicity.*

Native Americans are represented in greater number in the Northern California Region. The proportion of the population that identifies with one or more race groups is the same in each of the sub-regions (3%).

In both regions, the White population is by far the largest racial/ethnic population group, representing roughly 58% of the population in the Greater Sacramento Region and approximately 77% of the population in the Northern California Region. However, this proportion decreases by 10% in both regions among the population ages 18 or younger. Almost all of this decrease is balanced by an increase in Latino representation. In general, racial/ethnic diversity is more evident among the regions' younger population.

Data not shown here indicate that most of the Asian (89%), Native Hawaiian/Pacific Islander (90%), and African American (94%) populations live in the Greater Sacramento Region. Furthermore, these same data show that 70% of all Asians, 77% of all Native Hawaiians/Pacific Islanders, and 87% of all African Americans live in just two counties: Sacramento and Solano. The other racial/ethnic groups are distributed across the region's 26 counties in a pattern that resembles the geographic distribution of the general population.

In Figures 1 and 2 above, each category is exclusive, identifying the population by either a single race group, by Latino ethnicity (of any race group), or by more than one race group (the Multirace category). Another method of describing a population's racial/ethnic composition is to measure the proportion of the population identified by a particular race group, whether alone or in combination with any other race group. Table 4 below shows how racial/ethnic composition changes in each region using this broader measure.

In relative terms, the category Native American experiences the biggest increase

In the Greater Sacramento Region, the proportion of the population identified as Native American more than triples in size when using the measure of "race alone or in combination with another race group;" in the Northern California Region, the proportion more than doubles.

Table 4.
Race Alone or in Combination with Other Race Groups by Region: Greater Sacramento Region and Northern California Region

Race Category	Greater Sacramento Region		Northern California Region	
	Alone (%)	Alone/ Combined (%)	Alone (%)	Alone/ Combined (%)
White	58.2	67.4	77.0	87.2
African American	7.2	9.3	1.0	1.6
Asian	10.7	13.2	2.9	4.2
Native American	0.7	2.1	2.1	4.3
Native Hawaiian/Pacific Islander	0.5	0.8	0.1	0.3

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

in proportional representation when using this broader measure of race/ethnicity. In the Greater Sacramento Region, the proportion of the population identified as Native American more than triples in size when using the measure of "race alone or in combination with another race group;" in the Northern California Region, the proportion more than doubles. Although very small in absolute size, the size of the Native Hawaiian/ Pacific Islander population also experiences a large increase (in relative terms) when using this broad measure of race/ethnicity. This indicates that comparatively large proportions of the Native American and Native Hawaiian/Pacific Islander populations identify as Multiracial.

The broad race category of Asian obscures the fact that there are numerous Asian subpopulations, usually identified by nationality. The American Community Survey identifies more than a dozen such Asian subpopulations. Table 5 compares the distribution of the Asian population by selected group in the Sacramento/Northern California Region, with California as a whole.[6]

Table 5.
2005/2006 Asian Population by Selected Group: Sacramento/Northern California Region and California

Selected Asian Group	Sacramento/ Northern California Region	California
Estimated Asian Population	352,000	4,480,000
Filipino	29.1%	24.6%
Chinese	17.2%	25.2%
Asian Indian	15.0%	10.6%
Vietnamese	9.4%	11.9%
Japanese	7.1%	6.7%
Hmong	5.6%	1.6%
Laotian	5.0%	1.5%
Korean	4.5%	9.6%

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

** The "Other Asian" category includes Cambodian, Thai, Indonesian, Malaysian, Pakistani, Sri Lankan, Bangladeshi, Taiwanese and all other Asian groups not specified.*

6 These proportions do not sum to 100%. The remainder of the Asian population consists of groups too small to generate estimates of size using these survey data.

There are roughly 350,000 Asians[7] living in the Sacramento/Northern California Region, of which approximately 70% live in two counties: Sacramento and Solano. These data show that comparatively large proportions of the region's Asian population identify as Filipino, Asian Indian, Hmong, and Laotian, and by contrast, comparatively small proportions identify as either Chinese or Korean.

Table 6 shows the differences in median age across the different racial/ethnic groups and the two sub-regions.

These data is they illustrate how much younger the region's Latino and Multirace populations are by comparison with the other racial/ethnic groups. Depending on the sub-region, either 14 or 17 years separates the median age of the region's White population and Latino population.[8] There are also group differences in the median age across the two sub-regions. The Native American population in the Greater Sacramento Region is much older by comparison with the Northern California Region, whereas the Asian and Multirace populations are younger in the Greater Sacramento region.[9]

The foreign-born population of approximately 670,000 people in the Sacramento/Northern California Region represents approximately 15% of the total population. This is a much smaller proportion by comparison with California as a whole. Roughly 27% of the state's population is foreign-born. Most of the Sacramento/Northern California Region's foreign-born population identifies either

Table 6.
2005/2006 Median Age by Race/Ethnicity: Greater Sacramento Region and Northern California Region

Race/Ethnicity	Median Age	
	Greater Sacramento Region	Northern California Region
White	40	42
Native American	37	32
African American	29	28
Asian	33	36
Native Hawaiian/ Pacific Islander	31	–
Latino (of any race)	26	25
Multirace	19	24

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

Table 7.
2005/2006 Latino and Asian Populations Over the Age of 18 by Ability to Speak English: Sacramento/Northern California Region

Reported Ability to Speak English	Latino (%)	Asian (%)
Very Well	38.0	52.2
Well	18.7	25.3
Not Well	25.6	15.8
Not At All	17.7	6.7

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

Latin America (44%) or East Asia (26%) as its geographic region of birthplace.

Overall, approximately 40% of the Sacramento/Northern California Region's Latino population and approximately 60% of the Asian population are foreign-born. Because of these large proportions, these populations were selected for analysis of

7 This figure represents individuals identified as Asian alone. It does not include anyone who may be identified as multiracial Asians or Latinos who identify their race as Asian.

8 Data not shown here also indicate that there is also a wide range in the median age of the region's different Asian subpopulations. The Hmong and Laotian populations are youngest, with a median age of 19 and 24, respectively. By comparison, the median age of the region's Japanese population is 52 years old. See Appendix B: 2005/2006 Median Age by Selected Asian Group: Sacramento/ Northern California Region.

9 There were too few sample observations to estimate the median age of Native Hawaiians/Pacific Islanders in the Northern California Region.

Table 8.
2005/2006 Educational Attainment of Population Ages 25 and Over by Race/Ethnicity: Greater Sacramento Region

Educational Attainment	General Population Average (%)	White (%)	Asian (%)	African American (%)	Latino (%)	Native American (%)	Multirace (%)
High School	36.5	30.1	34.5	53.7	62.7	–	–
Under 1yr College (no degree)	7.4	8.2	4.2	5.9	5.7	–	–
1 – 2yrs College (no degree)	17.3	18.6	13.3	15.9	12.3	–	–
Associate's Degree	9.4	9.9	9.9	7.3	5.8	–	–
Bachelor's Degree	19.7	21.7	27.0	8.7	9.8	–	–
Master's Degree	6.4	7.7	7.1	2.3	2.2	–	–
Professional Degree/ Doctoral Degree (PhD)	3.3	3.8	4.1	6.2	1.5	–	–
Associate's Degree or higher	**38.8**	**43.1**	**48.1**	**24.5**	**19.3**	**27.2**	**38.6**

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

reported ability to speak English. These two populations were then stratified to select for only those over the age of 18. Table 7 illustrates the differences between these two populations, by their ability to speak English.

Limited English speakers represent a much greater share of the region's Latino population over the age of 18, compared with the region's Asian population over the age of 18. Region-wide, an estimated 43% of Latinos ages 18 and older are identified as speaking English either "not well" or "not at all". This compares with roughly 23% of the 18 and older Asian population. Those represented as speaking English either "not well" or "not at all" could be potentially isolated by the inability to communicate in English. This has important implications both for the delivery of health care services, participating in the health care workforce, and academic success in allied health education programs.

Table 8 reveals several striking differences in the level of educational attainment among racial/ethnic groups within each sub-region and between racial/ethnic groups across the two sub-regions.[10]

Table 8 includes several key data. First is the very large proportion of African Americans and Latinos in the Greater Sacramento Region whose highest level of education is a high school diploma. At every segment beyond the high school level, Latinos have comparatively low levels of educational attainment. This is not the case with the region's African American population. The proportion of the regional African American population having attended 1-2 years of college without receiving a degree, and

10 Due to the small number of sample observations for the Native American, Native Hawaiian/Pacific Islander, Multirace populations, as well as African Americans in the Northern California Region, estimating the full range of educational attainment for these groups was not possible.

Table 9.
2005/2006 Educational Attainment of Population Ages 25 and Over by Race/Ethnicity: Northern California Region

Educational Attainment	General Population Average (%)	White (%)	Asian (%)	African American (%)	Latino (%)	Native American (%)	Multirace (%)
High School	41.8	38.0	43.0	69.1	–	–	–
Under 1yr College (no degree)	7.8	8.1	5.2	5.8	–	–	–
1 – 2yrs College (no degree)	19.0	20.1	12.0	11.4	–	–	–
Associate's Degree	9.5	10.0	9.2	5.0	–	–	–
Bachelor's Degree	14.9	16.2	16.9	6.0	–	–	–
Master's Degree	4.7	5.1	6.8	1.7	–	–	–
Professional Degree/ Doctoral Degree (PhD)	2.4	2.5	6.9	<1.0	–	–	–
Associate's Degree or higher	**31.5**	**33.8**	**39.8**	**13.7**	**26.6**	**21.0**	**26.2**

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

the proportion that has received either a professional degree or a doctoral degree are both comparatively large. Furthermore, these data show that the proportion of African Americans that has earned either a professional or doctoral degree is higher by comparison with all other racial/ethnic groups. However, in general, it is the region's Asian population that should be considered the most highly educated.

Although it wasn't possible to calculate the full range of estimates for the region's Native American population, the data indicate that just 27% of Native Americans over the age of 25 in the Greater Sacramento Region have earned an associate's degree or higher. This is well below the general population average of roughly 39%.

The data in Table 9 show that, in general, the population in the Northern California region has lower levels of educational attainment by comparison with the population in the Greater Sacramento Region. Although it wasn't possible to calculate the full range of estimates for all racial/ethnic groups in the region, these data show that educational attainment is below average for the region's African American and Multirace populations, and well below average for the region's Native American population.[11]

Table 10 compares estimates of the median annual wage[12] for each of the different racial/ethnic groups across the two different sub-regions. All values are expressed in 2006 inflation-adjusted dollars.

These data corroborate other data presented in this section. In both sub-regions, the Latino population is younger, less well-educated, more likely to be potentially

11 There were too few sample observations to estimate the educational attainment for Native Hawaiians/Pacific Islanders.

12 We imposed certain conditions on the sample in order to generate these estimates. First, we limited the sample of workers to those who reported working at least 26 weeks and at least 20 hours per week in the previous year. Then we calculated an hourly wage that controlled for differences in weekly hours worked and the number of weeks worked. Finally, we multiplied the hourly wage by 2080 hours to obtain an annual FTE equivalent wage.

Half of all Latinos in the Northern California Region earned $23,000 per year or less; this is roughly $10,000 less than the median annual wage for the region's White population.

Table 10.
Median Annual Wage by Race/Ethnicity (2006 Inflation-Adjusted Dollars): Sacramento/Northern California Region

Race/Ethnicity	Median Annual Wage (2006 $)	
	Greater Sacramento Region	Northern California Region
White	$42,000	$32,800
Asian	$37,000	$30,990
Native American	$35,600	$27,290
African American	$34,675	$28,000
Multirace	$33,779	$24,378
Latino	$28,434	$22,797

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

linguistically isolated as limited English speakers, and earn comparatively low median wages. Half of all Latinos in the Northern California Region earned $23,000 per year or less;[13] this is roughly $10,000 less than the median annual wage for the region's White population. This earnings differential is even more pronounced in the Greater Sacramento Region where Latinos earned roughly $13,500/year less than Whites and approximately $9,500/year less than Asians.[14]

Regional Population Projections

Greater Sacramento Region

Population projections indicate that the Greater Sacramento Region is expected to increase in size by roughly 1.1 million people between 2005 and 2030 (a growth rate slightly faster than the statewide average). Over half of this population growth is expected to result from growth in Sacramento and Solano counties. Figure 3 below represents the projected population changes for the entire seven-county region. It shows a projected decline in proportional representation among the region's White population, and corresponding increases among the region's Latino, Asian, and Multirace populations. In fact, more than half the region's population growth is expected to result from growth in the Latino population.

In Figure 3, the Native American and Native Hawaiian/Pacific Islander populations are not shown. There are roughly 22,000 Native Americans and approximately 17,000 Native Hawaiian/Pacific Islanders living the Greater Sacramento Region. Collectively, they represent 1.2% of the region's population. Both are projected to increase in number between 2005 and 2030. However, they are expected to continue to represent, collectively, approximately 1.2% of the general population. Native American population growth is projected to be strongest in Solano County, while Native Hawaiian/Pacific Islander population growth is projected to be strongest in Sacramento County.

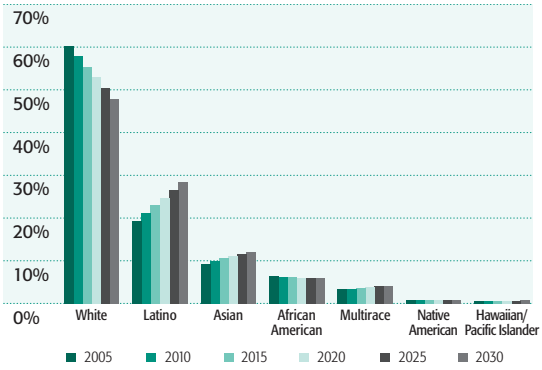
County-level data not shown here[15] indicate that several counties in the Greater Sacramento Region will experience dramatic transformations in terms of racial/ethnic composition of the population over the next twenty years. In 2005 Latinos represented roughly one-quarter of the population in Napa County; by 2030 they are projected to represent almost half the population. A similar scenario is projected for Sonoma

13 $22,000per year was just slightly more than the 2006 federal poverty threshold for a family of four. See 2006 federal poverty guidelines at http://aspe.hhs.gov/POVERTY/06poverty.shtml

14 Again, the small size of the Native Hawaiian//Pacific Islander population prevented us from generating wage estimates.

15 Analysis of CA Department of Finance, Demographic Research Unit, Population Projections 2000-2050 (July 2007).

Figure 3.
2005–2030 Projected Population by Race/Ethnicity: Greater Sacramento Region



Source: California Department of Finance, Demographic Research Unit

County. The Latino population is projected to roughly double in size, growing from 20% of the population in 2005 to nearly 40% of the population by 2030. And in Solano County, approximately 95% of the growth in population between 2005 and 2030 is projected to come from the county's Latino (57%) and Asian (39%) populations. Projections data also indicate that the under-17 population in most counties of the Greater Sacramento Region will also undergo dramatic changes in racial/ethnic composition over the next twenty years. Both Napa and Sonoma counties are projected to have under-17 Latino majorities by 2030, and the proportion of the under-17 population across the region will become increasingly Latino.[16]

The other population phenomenon expected to impact the region (as it will the entire state) is the aging of the population. Across the Greater Sacramento Region, the size of the population ages 65 and older is projected to more than double between 2005 and 2030. In El Dorado, Sacramento, Solano, Sonoma, and Yolo counties, this segment of the population is projected to grow at a rate three to four times faster than the general population. One of the concerns over this demographic shift is its impact on the healthcare workforce. It is expected to change the mix and type of human resources needed to care for population, including the need for allied health workers to provide services in acute and long-term care settings and in the home.

Northern California Region

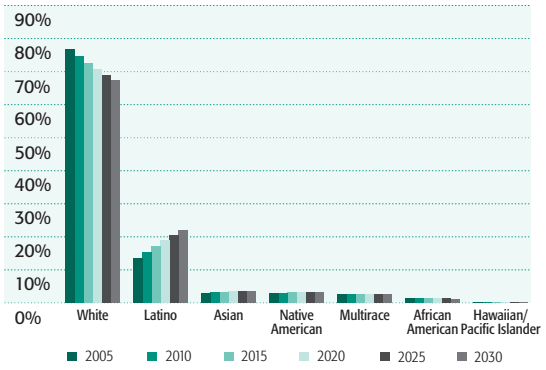
Population projections indicate that the Northern California Region is expected to increase in size by roughly 550,000 people between 2005 and 2030. This is a growth rate of approximately 46%, which is a much faster rate compared with both the Greater Sacramento Region and the statewide average. Half of this population growth is concentrated in three counties: Butte, Sutter, and Yuba counties.[17] Figure 4 below represents the projected population changes for the entire 19 county region.

These data show a projected decline in proportional representation among the region's White population, and corresponding increases among the region's Latino, Asian, and Native American populations. However, White population growth is expected to represent roughly half of the general population growth between 2005 and 2030 and Whites will remain a large population majority. Latino population growth is projected to be nearly as strong, accounting for approximately 40% of the region's general population growth during this period. Asian and Native American

16 For example, in Placer County, Whites are projected to decline from 78% of the under-17 population in 2005 to just 52% in 2030, while Latinos grow from 14% of the county's under-17 population in 2005 to roughly 37% by 2030.

17 Sutter and Yuba counties rank 1st and 2nd in terms of fastest-growing counties over the period 2005-2030, among all counties in California.

Figure 4.
2005–2030 Projected Population by Race/Ethnicity: Northern California Region



Source: California Department of Finance, Demographic Research Unit

population growth will each represent roughly 4% of total population growth. The region's current Native Hawaiian/ Pacific Islander population is less than 2,000 people and is not expected to grow significantly between 2005 and 2030. It is not depicted in the figure below.

County-level data not shown here[18] indicate that several counties in the Northern California Region will experience dramatic transformations in terms of racial/ethnic composition of the population over the next twenty years. In both Sutter and Yuba counties the size of the Latino population is projected to triple between 2005 and 2030, and in both Lake and Tehama counties it is projected to more than double. In Sutter County, Latinos currently represent roughly 22% of the county's population; by 2030 Latinos will represent approximately 47% of the population. In Yuba County the projected change is equally dramatic; the proportion of the population identified as Latino is expected to grow from 17% in 2005 to 37% in 2030. In Tehama County Latino representation is projected to double during this period, from 15% of the population in 2005 to 30% in 2030, and in Lake County, from 10% of the population in 2005 to 25% of the population in 2030.

Several other counties in the Northern California Region are also projected to see significant Latino population growth over the next two decades (though resulting in less dramatic shifts in the population's racial/ethnic composition). In Colusa, Glenn, Lake, and Mendocino counties, Latino population growth is projected to account for more than half of the general population growth between 2005 and 2030. In these four counties, as well as in Butte and Del Norte counties, Latino proportional representation is projected to increase at least 7% during this period. Throughout most of the region, population growth for the region's Native American population is projected to be minor. The exceptions to this general trend include Del Norte, Humboldt, and Mendocino counties. These three counties have the fastest-growing Native American populations in the state.

As noted earlier, the homogenous quality of these racial/ethnic categories obscure important differences in cultural identity within these groups. It may be that specific groups within the wider Latino or Native American populations disproportionately represent the source of population growth. These data alone cannot be used to determine whether this is the case.

Population growth trends among the region's under-17 population reflect the overall pattern of Latino growth. However, there

18 Analysis of CA Department of Finance, Demographic Research Unit, Population Projections 2000-2050 (July 2007).

is also the phenomenon of the declining general population among the region's youth. In four of the region's counties, Alpine, Humboldt, Nevada, and Sierra, the under-17 population is projected to decline between 2005 and 2030, and in Plumas it is projected to stagnate.

At the same time, the proportion of the population ages 65 and older in many counties of the region is growing very rapidly. In Lassen, Mendocino, Nevada, and Plumas counties, the population over the age of 65 is projected to grow four times as fast as the general population; in Humboldt County it is projected to grow eight times as fast, and in Alpine County it is projected to grow sixteen times as fast as the general population. Again, the major concern over this shift is how dramatic growth in this segment of the population will impact the healthcare workforce.

The Composition of the Current Regional Health Professions Workforce

Because this analysis is focused on a sub-state geographic region, we were not able to generate estimates at either the level of individual occupations or individual counties due to the small number of sample observations in the survey data. Our 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.[19]

- Health Diagnosing and Treating Practitioners (SOC 29-1000)
- Health Technologists and Technicians (SOC 29-2000)
- Healthcare Support Occupations (SOC 31-0000)
- Community and Social Service Counselors, Social Workers, and Community/Social Service Specialists (SOC 21-1000)[20]

Occupations among *Health Diagnosing and Treating Practitioners* 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**, **Physician Assistants**, and **Respiratory Therapists**.

Selected allied health occupations represented by the broad group *Health Technologists and Technicians* include **Dental Hygienists**, **Clinical Laboratory Scientists and Technicians**, **Radiologic Technologists and Technicians**, **Emergency Medical Technicians and Paramedics**, **Pharmacy Technicians**, **Psychiatric Technicians**, and **Licensed Vocational Nurses**. These occupations typically require an associate's degree for entry into practice. Some of these occupations earn comparatively high wages, but technologists and technicians are generally less well paid than diagnosing and treating practitioners. *Healthcare Support Occupations* are entry-level health care positions at the low end of the wage scale, typically requiring

19 These broad groups also include other healthcare occupations outside the scope of this analysis. For a list of all occupations represented by these groups see Appendix A: Detailed Listing of Occupations Used in This Report by Standard Occupation Classification.

20 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 healthcare-related industries.

less than a year of formal training (or simply on-the-job training). Occupations represented by this broad group that were selected for analysis in this report include **Nursing Assistants/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 and Substance Abuse Social Workers**, and **Public/Community Health Educators**.

Greater Sacramento Region

Table 11 shows composition by gender, and by race/ethnicity for each of these four broad occupational groups in the Greater Sacramento Region. The table does not include estimates for Native American, Native Hawaiian/Pacific Islander, or Multirace healthcare workers due to the small number of sample observations.

Table 11 highlights several important characteristics of the health professions workforce in the Greater Sacramento Region. With the exception of *Healthcare Support Occupations*, Whites are disproportionately represented, relative to the general labor force. This is also true for Asians, excepting the occupational group *Counselors, Social Workers, and Community and Social Service Specialists*, and for African Americans with the exception of the occupational group *Diagnosing and Treating Practitioners*. Latinos in the region are underrepresented in each of the occupational groups, but this underrepresentation is most pronounced among *Diagnosing and Treating Practitioners* and *Healthcare Technologists and Technicians*. These two occupational groups typically

Table 11.
2005/2006 Regional Health Professions Workforce by Occupational Group, by Gender and by Race/Ethnicity: Greater Sacramento Region

Occupational Group	M (%)	W (%)	White (%)	Asian (%)	Latino (%)	African American (%)
Counselors/Social Workers/ Community and Social Service Specialists (SOC 21-1000)	25.8	74.2	65.2	3.6	13.1	14.1
Diagnosing and Treating Practitioners (SOC 29-1000)	30.6	69.4	67.1	20.8	4.6	4.8
Healthcare Technologists and Technicians (SOC 29-2000)	29.5	70.5	62.9	12.9	8.0	11.6
Healthcare Support Occupations (SOC 31-1000)	13.5	86.5	49.5	19.3	13.8	13.0
Regional General Labor Force[21]	**49.4**	**50.6**	**59.9**	**11.2**	**18.3**	**6.9**

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

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

require greater levels of training and include the highest earning healthcare occupations.

It is difficult to analyze the representation of Native Americans and Native Hawaiians/Pacific Islanders in the region's healthcare workforce due to their very small population size. However, using the broader measure of *race alone or in combination with any other race* we can make some educated guesses. We know that roughly 2% of the region's general labor force identifies as Native American, whether alone or in combination with another race group. Using this measure of representation as a benchmark, Native Americans would be considered ***underrepresented*** among *Diagnosing and Treating Practitioners*. The Native Hawaiian/Pacific Islander population, whether alone or in combination with another race group, represents roughly 0.75% of the region's general labor force. Again, using this measure as a benchmark Native Hawaiians/Pacific Islanders would be considered ***underrepresented*** among *Social Workers, and Community and Social Service Specialists*. However, these estimates are imprecise given the very small number of sample observations.

Table 12 presents estimates of the median annual wage[22] by race/ethnicity for health care workers in the Greater Sacramento Region. All values are expressed in 2006 inflation-adjusted dollars.[23]

These data help develop the picture of the region's health professions workforce seen in the previous table, which showed concentrations of White and Asian health care workers in those segments of the workforce that require greater levels of education and that earn higher wages. They also suggest that while African Americans may be well represented in most segments of the region's health professions workforce, they may be concentrated in occupations that are at the lower end of the wage scale. Latinos appear to be both underrepresented and most frequently working in lower wage health care occupations.

Table 12.
Median Annual Wage of Health Care Workers by Race/Ethnicity (2006 Inflation-Adjusted Dollars): Greater Sacramento Region

Race/Ethnicity	Median Wage (2006 $)
White	$55,000
Asian	$52,800
African American	$38,500
Latino	$36,950

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

Northern California Region

In Table 13 shows the composition by gender and by race/ethnicity for each of the four broad occupational groups in the Northern California Region. These data are very limited due to small populations and sample sizes. Estimates for Asian health care workers are incomplete and estimates for Native American, African American, Native Hawaiian/Pacific Islander, and Multiracial health care workers are missing. Table 13 highlights several important characteristics of the health professions workforce in the Northern California Region. As with the Greater Sacramento Region, women predominate in all four of

22 We imposed certain conditions on the sample in order to generate these estimates. First, we limited the sample of workers to those who reported working at least 26 weeks and at least 20 hours per week in the previous year. Then we calculated an hourly wage that controlled for differences in weekly hours worked and the number of weeks worked. Finally, we multiplied the hourly wage by 2080 hours to obtain an annual FTE equivalent wage.

23 Due to the small number of sample observations, it was not possible to calculate an estimate for health care workers who identify as either Native American or Native Hawaiian/Pacific Islander.

Table 13.
2005/2006 Regional Health Professions Workforce by Occupational Group, by Gender and by Race/Ethnicity: Northern California Region

Occupational Group	M (%)	W (%)	White (%)	Latino (%)	Asian (%)
Counselors/Social Workers/ Community and Social Service Specialists (SOC 21-1000)	25.8	74.2	79.3	9.3	–
Diagnosing and Treating Practitioners (SOC 29-1000)	29.6	70.4	82.4	3.2	11.5
Healthcare Technologists and Technicians (SOC 29-2000)	25.7	74.3	86.1	7.9	–
Healthcare Support Occupations (SOC 31-1000)	8.4	91.6	80.0	7.0	3.8
Regional General Labor Force[24]	**49.4**	**50.6**	**78.1**	**12.6**	**3.0**

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

the broad occupational groups. In the Northern California Region, however, women represent an even greater share of the workforce among both *Healthcare Technologists* and *Technicians and Healthcare Support Occupations*. A second characteristic is the predominance of White health care workers. Roughly 78% of the region's labor force is White, so it isn't surprising to see that such large proportions of each occupational group are also White. Nonetheless, Whites are disproportionately represented among *Diagnosing and Treating Practitioners* and *Healthcare Technologists and Technicians*.[25]

These data indicate that the Latinos are underrepresented in all segments of the region's health care workforce. Estimates of how well Asians are represented among health care workers in the Northern California Region are difficult to determine, given the small number of sample observations in the survey data. However, the pattern these data describe is consistent with analysis of the Greater Sacramento Region (and with other analysis conducted for other regions of the state): Asians are overrepresented among *Diagnosing and Treating Practitioners*, which includes the highest paid, most highly educated health professionals.

Despite limited availability of data, it is possible to analyze Native American representation among regional health care workers using the broader measure of *race alone or in combination with any other race*. We know that roughly 4.5% of the Northern California Region's general labor force identifies as Native American, whether alone or in combination with another race group. Using this measure of representation as a benchmark, Native Americans would be considered ***underrepresented*** among

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

25 Again, our benchmark is the racial/ethnic composition of the general labor force.

Diagnosing and Treating Practitioners and *Healthcare Technologists and Technicians*. In contrast, nearly 10% of *Social Workers, and Community and Social Service Specialists*, and 8.5% of *Healthcare Support Occupations* identifies as Native American, whether alone or in combination with another race group.

Table 14.
Median Annual Wage of Health Care Workers by Race/Ethnicity (2006 Inflation-Adjusted Dollars): Northern California Region

Race/Ethnicity	Median Wage (2006 $)
Asian	$88,000
White	$44,000
Latino	$38,000
Native American*	$28,800

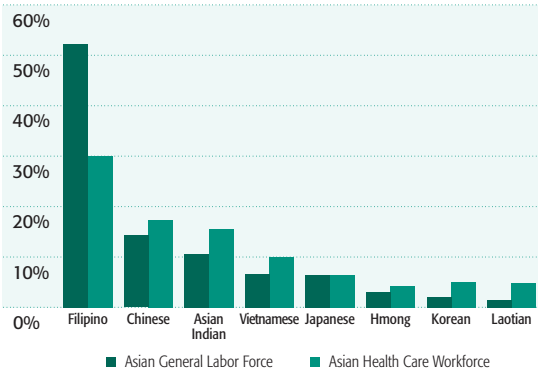
Source: Combined 2005 and 2006 American Community Survey PUMS for California

** Native American alone, or in combination with any other race*

These data reveal striking differences in the earnings of health care workers in the Northern California Region, depending on race/ethnicity. In Table 13, Asian health care workers were shown to be concentrated among Diagnosing and Treating Practitioners, a group that includes the most highly educated and highly paid health professionals. The earnings data shown in Table 14 suggest that Asian health care workers in the Northern California Region are concentrated in the high-income occupations in this group, most likely as Physicians, Dentists and Pharmacists. In contrast, these data indicate that Native American health care workers, who are best represented among social/community health professions and healthcare support, are employed in low wage occupations.

As noted, "Asian" is an overly broad race category. In the previous section describing characteristics of the general population, it was noted that there are many subpopulations within this larger category. Figure 5 compares the distributions of Asian health care workers (regardless of occupation) and the Asian general labor force in the wider Sacramento/Northern California region,[26] by selected Asian subpopulation. More than one-half of the Asian health care workforce[27] in the Sacramento/Northern California Region is identified as Filipino. In contrast, Filipinos represent just 30% of the region's Asian general labor force. Asian Indians, Vietnamese, Hmong, Koreans, and Laotians are all underrepresented among health care workers in the region. Overall, this data suggest that workforce recruitment and training programs could targeted toward certain Asian subgroups

Figure 5.
2005/2006 Distribution of the Asian General Labor Force vs. Asian Health Care Workforce by Selected Asian Groups: Sacramento/Northern California Region



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

26 Again, we use the region's population between the ages of 18 and 65 (inclusive) to proxy the general labor force.

27 These proportions do not sum to 100%. The remainder of the Asian population consists of groups too small to generate estimates of size using these survey data.

in order to increase their representation in the region's health care workforce.

Tables 15 and 16 describe representation of the Sacramento/Northern California Region's foreign-born population in the general labor force and among health care workers.

As noted in the previous section, large proportions of the Asian and Latino populations are foreign-born. Table 15 compares how foreign-born Asians in the Greater Sacramento Region are represented among the region's general labor force versus health care workers.[28] Table 16 compares how foreign-born Latinos in both the Greater Sacramento Region and the Northern California Region are represented among the region's general labor force versus health care workers.

Table 15 shows that foreign-born Asians in the Greater Sacramento Region are well-represented as health care workers. In contrast, Table 16 shows that foreign-born Latinos are much less likely to work in health care occupations. This difference in foreign-born Latino representation is more pronounced in the Northern California Region.

It's important to remember that that the categories of Latino and Asian are very broad and they obscure a variety of different subpopulations. In the measures we've used to analyze the current health professions workforce, it may be that certain Latino or Asian subpopulations are disproportionately represented. For example, it may be that specific Asian groups are overrepresented in the very highest-paying health care occupations, while others are overrepresented in the very lowest-paying health care occupations. Or it may be that certain groups within the broader Latino population that work in the region's health professions labor force are less well educated than are others. Unfortunately, the level of detail that we are able to present in our analysis is limited by the available data.

Table 15.
2005/2006 Foreign-born Asians in the Greater Sacramento Region: General Labor Force vs. Health Care Workforce

Foreign-born Proportion of Selected Population	
General Labor Force (%)	Healthcare Workforce (%)
71.7	79.5

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

Table 16.
2005/2006 Foreign-born Latinos in the Greater Sacramento Region and the Northern California Region: General Labor Force vs. Health Care Workforce

Foreign-born Proportion of Selected Population			
Greater Sacramento Region		Northern California Region	
General Labor Force (%)	Healthcare Workforce (%)	General Labor Force (%)	Healthcare Workforce (%)
50.9	27.3	51.5	21.6

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

28 There aren't enough sample observations to make this comparison for the Northern California Region.

Labor Market and Education Data for Selected Allied Health Occupations

The tables and figures in this section present data describing current employment, employment to population ratios, wages, and projected occupational growth for the selected allied health professions, as well as data describing the racial/ethnic composition of recent graduates of the selected allied health education programs. The labor market data is presented in as much geographic detail as possible: the metropolitan statistical area (MSA).[29]

In some cases the MSA corresponds to a single county, in other cases the MSA spans across multiple counties. The Sacramento-Arden-Arcade-Roseville MSA includes Sacramento, Yolo, Placer, and El Dorado counties. In the tables that follow, this group of counties is labeled Sacramento MSA. The Yuba City MSA includes Yuba and Sutter counties. In the tables that follow, this group of counties is labeled Yuba MSA.

There are also instances where multiple counties are grouped together and form an economic region. There are four such economic regions: the Eastern Sierra economic region (Alpine, Mono, Inyo counties);[30] the North Valley economic region (Colusa, Glenn, Tehama counties); the North Coast economic region (Del Norte, Humboldt, Lake, Mendocino counties); and the Northern Mountains economic region (Lassen, Modoc, Nevada, Plumas, Sierra, Siskiyou, Trinity counties). For certain occupations, current estimates of employment (and therefore employment per population ratios) and employment projections were not available. The symbol "—" is used to denote missing data.

There is an important caveat with respect to the employment projections data. At the time of this report, we used the most current data available (projections for the years 2004-2014). However, these county-level data are currently under revision and at some point in the near future all available data will refer to the period 2006-2016. As the Labor Market Information Division of the California Employment Development Department releases updated estimates, the employment outlook for many or all the occupations analyzed in this report may shift somewhat. Nevertheless, these data may be useful for regional workforce planning in that they

29 These data come from the California Employment Development Department, Labor Market Information Division and are released to the public already aggregated.

30 Inyo and Mono counties are actually part of the TCE-designated Fresno/Central California region. However, because of the way in which these labor market data are aggregated, we can't avoid including them in this report. For more information see: http://www.labormarketinfo.edd.ca.gov/?PAGEID=94

indicate areas of growth and the occupations likely to offer the greatest number of jobs in the selected allied health occupations.

In the figures describing the racial/ethnic composition of graduates of selected education programs, the proportional totals (percentages) displays represent graduates for whom race/ethnicity was reported. Graduates for whom race/ethnicity was not identified were excluded from these calculations. However, in the figures that follow below, both the total number of graduates who are identified by race/ethnicity and the total number of reported graduates (including those not identified by race/ethnicity) are noted. The convention we employed was to use (N) to denote "identified totals" and in parentheses underneath (N) is the "total reported". For example, **Figure 6. 2005–2007 Racial/Ethnic Composition for Reported Graduates of Dental Assistant Programs: Sacramento/Northern California Region**, shows that in 2007 there were 284 total graduates reported by programs in the region, and for 267 of these graduates race/ethnicity was reported.

In all of the labor market data tables that follow, the estimates of employment and employment per population ratios are for 2007, the estimates of median wages are for 2008, and the employment projections are the period 2004-2014, unless otherwise noted.

DENTAL ASSISTANT

Description: Dental Assistant

Registered Dental Assistants (RDA) 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, the licensed Registered Dental Assistant (RDA) has 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 (RDH) 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.[31]

Employment, Wage, and Education Data: Dental Assistant

See Tables 17 and 18, and Figure 6

Summary of Employment, Wage, and Education Data: Dental Assistant

Labor market data describing employment conditions for Dental Assistants in the Greater Sacramento Region are consistent in terms of employment per population levels, projected growth rates and wages, with certain exceptions. One is that the estimated median wage for Dental Assistants

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

Table 17.
Dental Assistant Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Dental Assistant	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	630	131	$45,698	1.7%	1.0%	21
Napa	170	125	$35,838	2.0%	1.4%	7
Solano	530	125	$36,442	1.3%	1.8%	19
Sacramento MSA	2680	126	$36,130	2.2%	2.1%	120

Source: California Employment Development Department, Labor Market Information Division

Table 18.
Dental Assistant Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

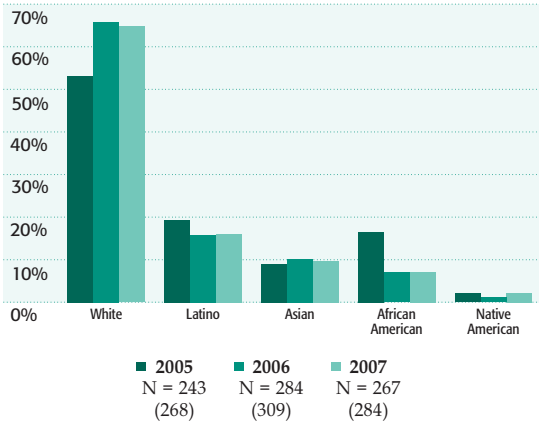
County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Dental Assistant	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	420	133	$28,662	0.6%	1.0%	12
North Mountains	190	83	$34,923	1.3%	1.2%	10
North Valley	90	80	$29,952	2.0%	1.3%	2
Shasta	220	121	$29,390	2.1%	1.6%	9
Butte	330	151	$28,787	2.6%	1.2%	10
Yuba MSA	220	132	$32,906	1.4%	1.3%	9
Eastern Sierra	–	–	$34,674	–	1.6%	–

Source: California Employment Development Department, Labor Market Information Division

in Sonoma County is roughly $10,000/year higher by comparison with the rest of the region. Another is the comparatively slow projected growth rate for Solano County. It's important to point out that the estimated annual number of job openings for the Sacramento MSA is substantially greater by comparison with the rest of the Greater Sacramento Region. Sacramento is a large metropolitan area with a labor market that extends across several counties. Because of this, employment opportunity will always be greater than in the smaller, less densely populated counties of the region.

There is some variation in the employment conditions for Dental Assistants in the Northern California Region. The number of Dental Assistants per population is substantially greater in Butte County

Figure 6.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Dental Assistant Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

(it is nearly twice as large as it is in the North Mountains economic region or North Valley economic region). However, the range in estimated median wages for Dental Assistants across the region is comparatively small. Only $6,000/year separates the highest median wage estimate in the North Mountains economic region from the lowest estimate (Butte County). The projected growth rates show differences across the region. Despite the already large supply of Dental Assistants in Butte County, the projected growth rate is nearly twice the average rate. Comparatively rapid growth is also projected for both the North Valley Economic Region and for Shasta County. In contrast, well below average growth is projected for the North Coast Economic Region.

The coverage of these labor market data may be less extensive for occupations that have a self-employment component, where either workers themselves, or their employer is considered self-employed. This is particularly an issue with respect to employment projections. This may have the effect of understating the annual number of job openings for Dental Assistants, who frequently work for self-employed dentists.

In terms of educational opportunity, the Committee on Dental Auxiliaries lists nine different "approved" Registered Dental Assistant programs in the Greater Sacramento/Northern California region. Of these nine "approved" schools, three are located in the Northern California Region and six are located in the Greater Sacramento Region.[32] The data reported here represent seven of these nine schools (although six of the seven reporting schools are in the Greater Sacramento Region).

These data indicate that total output has been consistent over the past three years (270-300 graduates per year). Well over 90% of Dental Assistant graduates are women. The racial/ethnic composition of reported graduates resembles that of the general population in the Greater Sacramento Region. White students form the largest racial/ethnic group (roughly 60% of the total), but Latino, Asian, African American, and Native American students are all represented in proportions roughly equal to their presence in the general population.[33] The largest individual programs (in terms of the total number of graduates) are private for-profit institutions, which collectively produce roughly 80% of reported graduates. The strong presence of private schools raises questions about the overall cost of training and student indebtedness.

32 Five of these six schools are located in Sacramento County.

33 Over the period 2005-2007, between 15% and 20% of the reported Dental Assistant graduates each year were unidentified by race/ethnicity. This is high by comparison with other programs analyzed in this report (typically between 5% and 10% of reported graduates are unidentified by race/ethnicity). It isn't known how the overall racial/ethnic composition of graduates would be affected if the race/ethnicity of these students was identified.

Table 19.
Dental Hygienist Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Dental Hygienist	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	380	79	$117,957	1.4%	1.0%	6
Napa	100	74	$107,078	2.5%	1.4%	4
Solano	250	59	$93,475	1.4%	1.8%	8
Sacramento MSA	1280	60	$77,605	2.2%	2.1%	43

Source: California Employment Development Department, Labor Market Information Division

Table 20.
Dental Hygienist Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Dental Hygienist	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	–	–	$41,787	–	1.0%	–
North Mountains	210	91	$67,246	0.9%	1.2%	4
North Valley	70	62	$92,352	3.3%	1.3%	1
Shasta	110	61	$78,042	1.9%	1.6%	4
Butte	–	–	$67,330	1.4%	1.2%	2
Yuba MSA	70	42	$88,504	0%	1.3%	0
Eastern Sierra	–	–	$122,824	–	1.6%	–

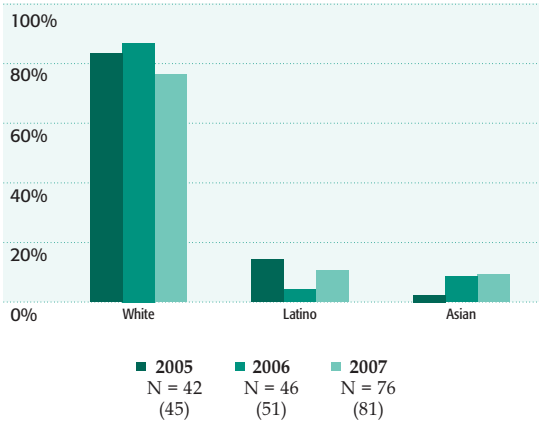
Source: California Employment Development Department, Labor Market Information Division

DENTAL HYGIENIST

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

Figure 7.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Dental Hygienist Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

in California can deliver local anesthesia, as well as nitrous oxide and oxygen.

Employment, Wage, and Education Data: Dental Hygienist

See Tables 19 and 20, and Figure 7

Summary of Employment, Wage, and Education Data: Dental Hygienist

According to these data, there is variation in employment conditions for Dental Hygienists across the Greater Sacramento Region. The employment per population ratio and median wages are considerably higher in both Napa and Sonoma counties. Roughly $40,000/year separates the estimates of median wages in Sonoma County and the Sacramento MSA. And within this wide range there are large differences; the estimates of median wage are separated by $10,000-$15,000/year from county to county. Projected growth rate data indicate below average growth in the Sacramento MSA, average growth in Sonoma and Solano counties and well above average growth in Napa County.

Data describing labor market conditions for Dental Hygienists in the Northern California Region show considerable variation. The employment per population ratio for Dental Hygienists in the North Mountains economic region is anywhere from 1.5 times to 2 times larger by comparison with the rest of the Northern California Region. There is a roughly $80,000/year difference between the estimated median wage in the Eastern Sierra (which includes Alpine County) and the Northern Coast economic regions. Within this wide range of earnings there are large differences in the median wage across geographies; the estimates for each county or economic region tend to cluster in $10,000/year increments. Median wages for Dental Hygienists working in either the Yuba MSA or the North Valley economic region are anywhere from $10,000 to $40,000/year higher, compared with the rest of the region. Projected growth rates also vary, but across the region, the number of job openings each year will be small.

As noted above, the coverage of these labor market data is less extensive for occupations that have a self-employment component, where either workers themselves, or their employer is considered self-employed. This is an issue with respect to employment projections. The less extensive coverage may have the effect of understating the annual number of job openings for Dental Hygienists, who frequently work for self-employed dentists.

There are currently four Dental Hygiene programs in the Sacramento/Northern California Region. The significant increase in the number of graduates between 2006 and 2007 is the result of the new program at Western Career College in Sacramento. Three of the four programs are in the Greater Sacramento Region; the lone program in the Northern California Region is at Shasta Community College. The gender composition of the region's Dental Hygiene programs is homogenous: 95% of graduates are women. The racial/ethnic profile of graduates lacks diversity. White students represent 75%-80% of the total number of graduates, and in the past three years, there have been a total of two Native American graduates reported and no African American graduates reported.

MEDICAL ASSISTANT

Description: Medical Assistant

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, Wage, and Education Data: Medical Assistant

See Tables 21 and 22, and Figure 8

Summary of Employment, Wage, and Education Data: Medical Assistant

Labor market data describing employment conditions for Medical Assistants in the Greater Sacramento Region show some variation. The employment per population ratio is considerably higher in Solano County, and there is a roughly $11,000/year difference in the estimated median wage comparing Solano County and the rest of the Greater Sacramento Region. Projected growth rate data indicate below average growth in the Sacramento MSA, but well above average growth for the rest of the region.

Labor market data also show variable employment conditions for Medical Assistants across the Northern California Region. Although the median wage is relatively consistent across the region, the ratio of Medical Assistants per population in the Northern Mountains and Northern Valley economic regions is much lower by comparison. Projected growth rates also vary, with well above average growth expected in Butte County and the Northern Mountains economic region, but average or moderately above average growth projected for the rest of the region. As with the Greater Sacramento Region, Medical Assistant employment is projected to be a significant source of opportunity.

Table 21.
Medical Assistant Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Medical Assistant	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	870	180	$32,490	2.7%	1.0%	22
Napa	–	–	$31,034	3.6%	1.4%	8
Solano	880	208	$41,018	3.0%	1.8%	31
Sacramento MSA	3400	160	$29,411	1.5%	2.1%	86

Source: California Employment Development Department, Labor Market Information Division

Table 22.
Medical Assistant Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Medical Assistant	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	730	232	$28,538	1.8%	1.0%	16
North Mountains	250	109	$29,702	2.4%	1.2%	9
North Valley	100	88	$26,998	2.0%	1.3%	2
Shasta	460	254	$29,120	2.3%	1.6%	20
Butte	610	278	$27,664	3.2%	1.2%	31
Yuba MSA	310	185	$27,248	1.3%	1.3%	10
Eastern Sierra	50†	149†	$24,419	1.4%	1.6%	2

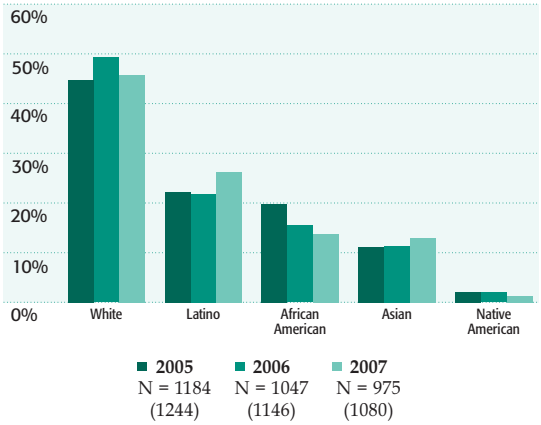
† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

The coverage of these labor market data is less extensive for occupations that have a self-employment component, where either workers themselves, or their employer is considered self-employed. This is particularly an issue with respect to employment projections. The less extensive coverage may have the effect of understating the annual number of job openings for Medical Assistants, who most frequently work for self-employed physicians.

Educational opportunities for Medical Assistants are widespread. In the database used for this analysis, we identified 17 different programs reporting graduates. However, this is only a sample[34] of the total number of programs in the region. We were able to identify 15 other Regional

34 Although we acknowledge that the medical assistant education data presented here are only a sample, we believe they are representative in that the reporting programs are a mix of public and private, two-year and less-than-two-year institutions.

Figure 8.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Medical Assistant Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Occupations Programs (ROPs) and Adult Vocational Schools[35] that also offer Medical Assistant training, but do not report student data. However, the institutions we were able to identify are overwhelmingly located in the Greater Sacramento Region. This suggests there are very few Medical Assistant training opportunities across the Northern California Region. The largest individual Medical Assistant education programs (in terms of the number of graduates) are hosted by less-than-two-year, private, for-profit institutions. Over the past three years, private for-profit schools produced over 90% of the reported Medical Assistant graduates in the region. The predominance of private schools in training Medical Assistants may indicate a lack of public programs, a lack of capacity in public programs, or features such as flexible course schedules and availability that may be attractive to students.

The gender composition of graduates heavily favors women, who represent 90% of the total. In contrast, the racial/ethnic profile is the most diverse of any of the selected education programs. White students form the largest racial/ethnic group at 45-50% of the total, but Latino, African American and Asian students are all well represented. Native American students represent roughly 2% of the total number of graduates.

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 the prescription, 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, Wage, and Education Data: Pharmacy Technician

See Tables 23 and 24, Figure 9

35 All but one of the Adult Vocational Schools that we were able to identify are private programs run by Boston Reed College in partnership with county school districts.

Table 23.
Pharmacy Technician Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Pharmacy Tech	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	380	79	$29,494	2.3%	1.0%	9
Napa	110	81	$35,734	2.9%	1.4%	3
Solano	270	64	$38,334	3.3%	1.8%	10
Sacramento MSA	1400	66	$37,690	2.9%	2.1%	58

Source: California Employment Development Department, Labor Market Information Division

Table 24.
Pharmacy Technician Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

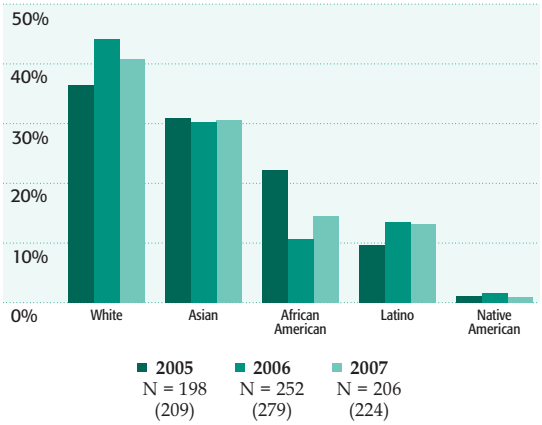
County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Pharmacy Tech	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	270	86	$35,485	2.0%	1.0%	7
North Mountains	160	70	$36,338	2.7%	1.2%	6
North Valley	70	62	$32,718	2.5%	1.3%	3
Shasta	190	105	$37,003	1.8%	1.6%	7
Butte	220	100	$35,963	1.7%	1.2%	5
Yuba MSA	90	54	$38,251	3.3%	1.3%	3
Eastern Sierra	–	–	$35,027	1.0%	1.6%	1

Source: California Employment Development Department, Labor Market Information Division

Summary of Employment, Wage, and Education Data: Pharmacy Technician

Employment conditions for Pharmacy Technicians are consistent across the Greater Sacramento Region, with the exception of Sonoma County, where estimates of the median wage is lower and the projected growth rate slower by comparison with the rest of the region. Pharmacy Technician is one of the faster growing occupations in the Greater Sacramento Region, though because it is a comparatively small workforce in size, this growth is expected to translate into fewer job opportunities, relative to other entry-level health care occupations.

Figure 9.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Pharmacy Technician Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Labor market data show more variable employment conditions for Pharmacy Technicians across the Northern California Region. Although the median wage is consistent across the region, the ratio of Pharmacy Technicians per population in Butte and Shasta counties is considerably higher by comparison. Interestingly, median wages for Pharmacy Technicians in the Northern California Region are comparable to those in the Greater Sacramento Region; typically, wages are lower in the Northern California Region. Projected growth rates vary across the region, with very high rates of growth expected in Northern Mountains and Northern Valley economic regions, as well as in Yuba/Tehama counties, but more modest growth and even below average growth projected for the rest of the region. Again, the Pharmacy Technician workforce is not as large as some of the other entry-level health care occupations and the number of expected job openings reflects this fact.

All of the Pharmacy Technician programs reporting data are located in the Greater Sacramento Region. We were able to identify five other Regional Occupations Programs (ROPs) and Adult Vocational Schools[36] that also offer Pharmacy Technician training, but do not report student data. Of these five non-reporting programs, only one was located in the Northern California Region; this suggests there are very few Pharmacy Technician training opportunities across the Northern California Region. The gender composition of graduates of Pharmacy Technician programs favors women, who represent roughly 75% of the total. The racial/ethnic profile of students, however, is comparatively diverse. White students represent the largest racial/ethnic group, but Asian, African American and Latino students are all strongly represented. Native American students are underrepresented at roughly 1% of the total number of graduates.

HOME HEALTH AIDE AND NURSING ASSISTANT/AIDE

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 assistants/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 non-sterile dressings and may assist with medical equipment.

36 Of these five programs, three are private programs run by Boston Reed College in partnership with county school districts.

Table 25.
Home Health Aide Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Home Health Aide	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	850	176	$22,381	3.9%	1.0%	40
Napa	180	133	$23,130	1.3%	1.4%	6
Solano	740	175	$17,826	5.0%	1.8%	27
Sacramento MSA	2990	141	$20,800	4.4%	2.1%	127

Source: California Employment Development Department, Labor Market Information Division

Table 26.
Home Health Aide Current Employment Estimates and 2004-2014 Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Home Health Aide	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	600	190	$19,240	2.5%	1.0%	26
North Mountains	220	96	$20,592	4.2%	1.2%	11
North Valley	180†	164†	$18,658	4.4%	1.3%	10
Shasta	520	287	$18,824	2.5%	1.6%	17
Butte	850	388	$19,178	4.4%	1.2%	45
Yuba MSA	–	–	$19,178	5.0%	1.3%	6
Eastern Sierra	–	–	$19,094	–	1.6%	–

† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

Employment and Wage Data: Home Health Aide

See Tables 25 and 26

Summary of Employment and Wage Data: Home Health Aide

Labor market data indicate consistent employment conditions for Home Health Aides in the Greater Sacramento Region, with the exception of a much lower projected growth rate for Napa County. Home Health Aide is the fastest growing health care occupation in the region and will be a significant source of employment in the health care sector. Home Health Aide is also the lowest-paid of any of the selected allied health care occupations.

Labor market data show more variable employment conditions for Home Health

Table 27.
Nursing Assistant/Aide Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Nursing Asst/Aide	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	1300	270	$31,782	1.3%	1.0%	44
Napa	590	435	$29,328	1.6%	1.4%	9
Solano	1060	250	$25,792	3.3%	1.8%	38
Sacramento MSA	6080	287	$27,435	1.7%	2.1%	180

Source: California Employment Development Department, Labor Market Information Division

Table 28.
Nursing Assistant/Aide Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Nursing Asst/Aide	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	400	127	$21,570	0%	1.0%	9
North Mountains	440	192	$26,291	1.3%	1.2%	14
North Valley	210†	192†	$25,522	0.5%	1.3%	4
Shasta	470	259	$27,144	2.2%	1.6%	29
Butte	1110	507	$21,632	1.3%	1.2%	29
Yuba MSA	370	221	$24,731	1.5%	1.3%	9
Eastern Sierra	110	328	$23,442	3.6%	1.6%	5

† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

Aides across the Northern California Region. Although the median wage is consistent across the region, the ratio of Home Health Aides per population in Butte and Shasta counties is considerably higher by comparison. As with Pharmacy Technicians, median wages for Home Health Aides in the Northern California Region are comparable to those in the Greater Sacramento Region; this contradicts the typical pattern of lower wages in the Northern California Region. Projected growth rates vary across the region, with comparatively high rates of growth expected in Northern Mountains and Northern Valley economic regions, as well as in Butte and Yuba/Tehama counties. Home Health Aide is expected to be a significant source of employment opportunity in the region.

Description: Nursing Assistant/Aide
Nursing Assistants/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. They typically also dress, bathe, and provide skin care to patients; take a patient's temperature, pulse rate, respiration rate, and blood pressure; and help patients get into and out of bed and walk. They also observe patients' physical, mental, and emotional conditions and report any change to the nursing or medical staff. Nursing Assistants/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.

Employment and Wage Data: Nursing Assistant/Aide

See Tables 27 and 28

Summary of Employment and Wage Data: Nursing Assistant/Aide

Labor market data indicate consistent employment conditions for Nursing Assistants/Aides in the Greater Sacramento Region. The exception is the employment per population ratio in Napa County. Here, the level of Nursing Assistant/Aide employment relative to the population is roughly twice as high compared with the rest of the region. In comparison to Home Health Aides, median wages for Nursing Assistants/Aides in the Greater Sacramento Region are $7,000-$9,000/ per year higher. Nursing Assistant/Aide is not a fast-growing occupation, but because it is a large workforce with historically high turnover rates, it will be a significant source of employment opportunity in the region.

Employment conditions for Nursing Assistants/Aides across the Northern California Region are more variable. The median wage is consistent; however, the ratio of Nursing Assistants/Aides per population in Butte County is between two and four times larger by comparison with the rest of the region. Projected growth rates also vary highly, from well-above average growth projected for the Eastern Sierra economic region (Alpine County), to zero growth projected for the Northern Coast economic region. In comparison to Home Health Aides, median wages for Nursing Assistants/Aides in the Northern California Region are typically $2,000-$5,000/ per year higher (The exception is Shasta County where the difference in earnings between these two occupations is roughly $8,000.). As noted, Nursing Assistant/Aide is not a fast-growing occupation, but it is a large workforce with historically high turnover rates. Because of these factors, it is expected to be a significant source of employment opportunity in the region.

Home Health Aide and Nursing Assistant/Aide Education

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 Assistant/Aide and Home Health Aide for a total of 160 hours of training. A previously certified Nursing Assistant/Aide can become a certified Home Health Aide with an additional 40 hours of training. Home Health Aide training programs are

Table 29.
Number of Home Health Aide and Nursing Assistant/Aide Programs by County: Greater Sacramento Region

County	Home Health Aide Training Programs	Nursing Assistant/Aide Programs	
		School-based Programs	Skilled Nursing Facility-based
Sonoma	3	5	5
Napa	–	1	2
Solano	5	6	4
Sacramento	8	10	16
Yolo	–	1	6
Placer	3	3	9
El Dorado	1	1	2

Source: California Employment Development Department, Labor Market Information Division

offered by community colleges, public adult vocational programs and through Regional Occupations Programs (ROPs) administered by local public school districts. Opportunities are widespread.

According to the California Department of Public Health there are 19 Home Health Aide training programs in the Greater Sacramento Region (see Table 29). In two of the region's counties (Napa and Yolo) there are no Home Health Aide training programs. The Northern California Region has 21 Home Health Aide programs, but there are several counties in which there are none (see Table 30). In recent years, these programs have not reported student data in a way that allows an accurate description of their graduates, including their racial/ethnic composition, or the number trained each year.

The state of California requires that Nursing Assistants/Aides undergo 150 hours of training in order to become certified. Requirements are specified by the state; details are available at http://www.dhs.ca.gov/lnc/download/cert/CertificationFacts.pdf. Nursing Assistant/Aide training programs are offered by both schools (community colleges, public adult vocational programs, and Regional Occupations Programs (ROPs) administered by local public school districts) and in skilled nursing facility-based settings.

Training opportunities for Nursing Assistants/Aides are widespread. The California Department of Public Health lists 71 school-based and skilled nursing facility-based training programs in the Greater Sacramento Region. In the Northern California Region, there are 70 school-based and skilled nursing facility-based Nursing Assistant/Aide training programs, but there are two counties (Alpine and Sierra counties) that do not have a single program. In recent years, none of these programs have reported student data in a way that allows

Table 30.
Number of Home Health Aide and Nursing Assistant/Aide Programs by County: Northern California Region

County	Home Health Aide Training Programs	Nursing Assistant/Aide Programs	
		School-based Programs	Skilled Nursing Facility-based
Del Norte	–	1	1
Humboldt	1	2	4
Mendocino	2	2	4
Lake	1	2	3
Trinity	–	–	1
Siskiyou	3	1	1
Modoc	–	–	2
Lassen	1	1	1
Plumas	–	7	2
Sierra	–	–	–
Nevada	3	–	3
Shasta	3	3	6
Tehama	1	1	1
Glenn	2	1	1
Colusa	–	–	1
Butte	3	3	8
Yuba	–	1	1
Sutter	1	2	3
Alpine	–	–	–

Source: California Employment Development Department, Labor Market Information Division

us to identify and describe their graduates. Therefore, we cannot describe their racial/ethnic composition, nor can we give a sense of the number of people trained each year.

LICENSED VOCATIONAL NURSE

Description: Licensed Vocational Nurse

Licensed Vocational Nurses (LVNs) are licensed in the state by the California Board of Vocational Nursing and Psychiatric Technicians. LVNs provide care 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.

Table 31.
Licensed Vocational Nurse Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	LVN	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	800	166	$52,686	0.5%	1.0%	26
Napa	290	214	$43,098	0%	1.4%	6
Solano	750	177	$48,776	2.1%	1.8%	23
Sacramento MSA	2750	130	$49,899	1.3%	2.1%	91

Source: California Employment Development Department, Labor Market Information Division

Table 32.
Licensed Vocational Nurse Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	LVN	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	380	121	$43,514	0%	1.0%	9
North Mountains	330	144	$41,579	2.6%	1.2%	9
North Valley	–	–	$44,948	0%	1.3%	2
Shasta	250	138	$41,850	2.3%	1.6%	20
Butte	–	–	$42,910	0.6%	1.2%	18
Yuba MSA	240	144	$42,869	–	1.3%	–
Eastern Sierra	90	268	$43,742	0%	1.6%	1

Source: California Employment Development Department, Labor Market Information Division

In California, they 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.

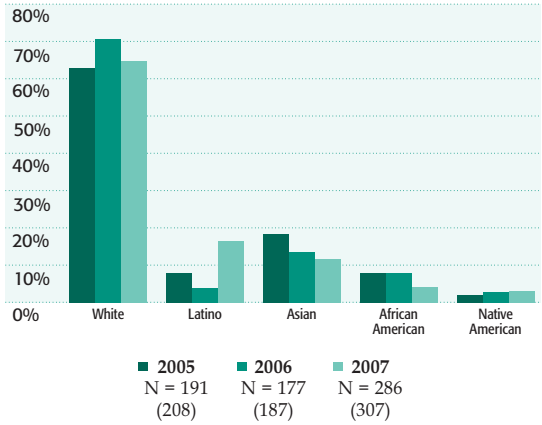
Employment, Wage, and Education Data: Licensed Vocational Nurse

See Tables 31 and 32, and Figure 10

Summary of Employment, Wage, and Education Data: Licensed Vocational Nurse

Labor market data indicate variations in employment conditions for Licensed

Figure 10.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Licensed Vocational Nursing Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Vocational Nurses in the Greater Sacramento Region. The employment per population ratio in Napa County is much higher by comparison with the rest of the region. There is also a $9,000 range between the lowest median wage in Napa County and highest median wage in Sonoma County. Projected growth rates also vary widely, from zero growth and near zero growth in Napa and Sonoma counties, to average growth in Solano County. LVN is not a fast-growing occupation, but because it is a large workforce, with the need to replace LVNs leaving the workforce, it will be a significant source of employment opportunity in the region.

Overall, median wages and employment levels for LVNs are consistent across the Northern California Region. The exception is a comparatively large employment per population in the Eastern Sierra Economic Region (Alpine County). Relative to the population, the number of LVNs in this group of counties is nearly twice as large compared with the rest of the Northern California Region. Projected growth rates also vary, with solid growth projected for the Northern Mountains economic region and for Shasta County, but growth rates of zero and near zero for the rest of the region. As noted above, LVN is not a fast-growing occupation, but it is a large workforce, and the need to replace those who leave the workforce should be a significant source of employment opportunity in the region.

According to the California Board of Vocational Nursing and Psychiatric Technicians there are currently 22 approved LVN programs[37] across the Sacramento/ Northern California Region. Half of these LVN programs are located at regional community colleges; the other half are evenly split between private, for-profit institutions and Regional Occupations Programs (ROP) and/or Adult Vocational Schools. The geographic distribution of these programs shows widespread access to training, with roughly half of the programs located in each sub-region. The data shown in Figure 10 represent 15 of these 20 programs, and all but two of the reporting schools are part of the community college system (the other two are private, for-profit institutions).

In 2007, these 15 programs community colleges reported approximately 300 new graduates. Part of the gain in the number of reported graduates between 2005 and 2007 can be attributed to a new program at CSI Career College in Solano County (it reported 25 graduates in 2007, whereas it had not reported any graduates in previous years.) Similarly, programs at Santa Rosa Junior College and Lake College (in Shasta County)

37 Two of the region's community colleges (Feather River and College of the Redwoods) each offer the LVN program on two campuses.

reported increasingly greater numbers of graduates each year, over the period 2005-2007. Another factor in the year-over-year increase is that three of the largest programs in the region reported very few graduates in 2006, compared with both 2005 and 2007.[38] It isn't clear from these data whether this decline in 2006 reflects a real downturn in the number of LVN graduates at these programs, or is simply a data reporting issue.

Nearly 90% of reported graduates are women. The racial/ethnic composition of LVN graduates shows some variation in the last three years, although graduates remain mainly White (65%-70% of the total). These data suggest a declining proportion of Asian graduates and an increasing proportion of Latina graduates. Both African American and Native American students are represented in proportions similar to their presence in the general population. It is not clear how racial/ethnic composition would change (if at all), if student data for all of the region's schools were available. As noted, almost all of the reporting programs are in the community college system. It may be that the racial/ethnic composition of students pursuing LVN training through the region's private for-profit institutions and/or Regional Occupations Programs (ROP) and Adult Vocational Schools differs from those students attending the region's community colleges.

NURSE PRACTITIONER

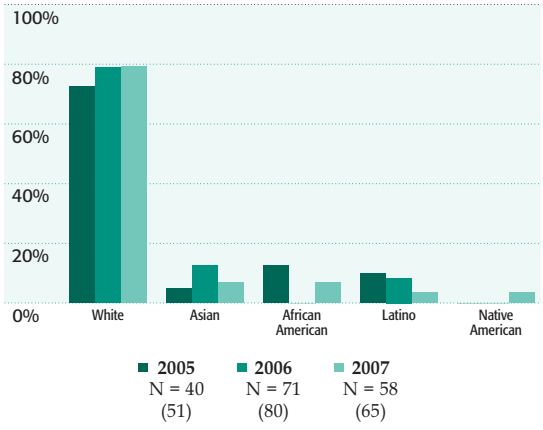
Description: Nurse Practitioner

Nurse Practitioners are advanced practice nurses who work independently or in collaboration with physicians. Other advance 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, Nurse Practitioners can furnish (order) 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 (BRN). Approximately 6.6% of the current California-licensed RN workforce holds the NP certification.[39] 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).[40] According to Section 2835.5 of the Nursing Practice Act,[41] "on and after January 1, 2008,

The racial/ethnic composition of LVN graduates shows some variation in the last three years, although graduates remain mainly White. These data suggest a declining proportion of Asian graduates and an increasing proportion of Latina graduates.

Figure 11.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Post-License Master of Science in Nursing Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

38 Butte College reported 63 LVN graduates in 2005, 4 graduates in 2006, and then 72 graduates in 2007. Napa Valley College reported 18 LVN graduates in 2005, 4 graduates in 2006, and then 25 graduates in 2007. College of the Redwoods reported 54 LVN graduates in 2005, 24 graduates in 2006, and then 57 graduates in 2007.

39 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.

40 http://www.rn.ca.gov/leg/leg2004.htm#AB2226

41 http://www.rn.ca.gov/npa/npa.htm

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."

Employment, Wage, and Education Data: Nurse Practitioner

Wage data and employment projections data specifically describing Nurse Practitioners are not available. Therefore, we cannot present any analysis of their employment conditions or outlook. Education data are limited to graduates of Master of Science in Nursing (MSN) programs generally, not Nurse Practitioner programs specifically. Therefore Figure 11 describes the racial/ethnic composition of graduates of the region's MSN programs, including Nurse Practitioner and other master's programs.

Although there are no labor market data specifically describing the employment conditions for Nurse Practitioners, the employment outlook for Registered Nurses in both the Greater Sacramento Region and the Northern California Region is strong. Registered Nurses are well paid: the median wage in the Greater Sacramento Region ranges from $75,000-$85,000 per year; in the Northern California Region it ranges from $65,000-$75,000 per year. Because the RN labor force is the largest of any healthcare occupation it will continue to be an important source of employment opportunity.

Summary of Education Data: Nurse Practitioner

The student data in Figure 11 represent programs at Sonoma State and Sacramento State universities. The programs at Sonoma State and Sacramento State universities produce 60-80 new MSN graduates per year in each of the past three years. It is unknown what proportion of these graduates received training as a Nurse Practitioners. Graduates of these programs are overwhelmingly women (95%) and mainly White (75%-80%).

In July of 2007, Sonoma State received a three-year grant from the Health Resources and Services Administration (HRSA) to strengthen its ability to deliver the Nurse Practitioner program to rural and frontier communities in California. Over the last several years, the program at Sonoma State has made progress in this effort by making the Nurse Practitioner program available to students on the CSU Chico and Stanislaus campuses using distance education technologies. There is also a Family Nurse Practitioner and Physician Assistant certificate program at UC Davis[42] and students who complete the FNP certificate program are eligible to complete an MSN degree at Sacramento State. However, the scope of nursing education options at UC Davis and in the region can be expected to broaden when the proposed school of nursing at UC Davis opens.[43]

PHYSICIAN ASSISTANT

Description: Physician Assistant

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,

42 According to the program's website, the Family Nurse Practitioner and Physician Assistant program admits between 50 and 60 new students each year. These data do not identify how many students pursue training as Nurse Practitioners and how many as Physician Assistants.

43 For more information see: http://www.ucdmc.ucdavis.edu/nursing/about_us/vision.html

Table 33.
Physician Assistant Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Physician Asst	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	40	29	$73,653	3.3%	1.0%	3
Napa	–	–	$92,102	–	1.4%	–
Solano	40	9	$77,147	2.5%	1.8%	2
Sacramento MSA	410	19	$87,110	3.3%	2.1%	15

Source: California Employment Development Department, Labor Market Information Division

Table 34.
Physician Assistant Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Physician Asst	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	90	29	$79,290	–	1.0%	–
North Mountains	30	13	$80,184	2.0%	1.2%	2
North Valley	30	27	$80,870	–	1.3%	–
Shasta	60	33	$92,498	2.0%	1.6%	2
Butte	80	37	$79,664	2.5%	1.2%	2
Yuba MSA	40	24	$49,920	4.0%	1.3%	3
Eastern Sierra	–	–	$122,845	–	1.6%	–

Source: California Employment Development Department, Labor Market Information Division

and preventive health care services, as delegated by a physician. Working as members of the health care team, they 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, Wage, and Education Data: Physician Assistant

See Tables 33 and 34

Summary of Employment, Wage, and Education Data: Physician Assistants

Labor market data indicate considerable variation in employment conditions for Physician Assistants in the Greater Sacramento Region. The employment per

population ratio in Sonoma County is three times larger than it is Solano County. There is also a $20,000 per year difference between the lowest median wage in Sonoma County and highest median wage in Napa County. Projected growth rates are more consistent: Physician Assistant is one of the faster-growing occupations in the region. However, this is a small workforce and so despite rapid growth the number of expected job openings will comparatively small.

Labor market data describing Physician Assistants in the Northern California Region are limited, indicating wide variation in employment conditions where available. The ratio of Physician Assistants per population in Butte County is two to three times higher by comparison with the rest of the region. There is a $70,000/year difference between the highest median wage in the Eastern Sierra economic region (Alpine County) and the lowest median wage in Yuba/Sutter counties. Comparatively strong growth is projected across the region, but again this is a small workforce and so the number of job openings will be correspondingly small.

There is a single PA training program for the entire Sacramento/Northern California Region at UC Davis (the Family Nurse Practitioner and Physician Assistant certificate program). Unfortunately, no student data have been reported to IPEDS in recent years. According to the program website, between 50 and 60 students are accepted into the program each year. These data give no indication how many of these admitted students pursue training as Physician Assistants versus training as a Family Nurse Practitioner.

The stated mission of the PA program is to train practitioners committed to serving underserved populations.

RESPIRATORY THERAPIST

Description: Respiratory Therapist

Respiratory Therapists are primarily responsible for the evaluation and treatment of patients with breathing or cardiopulmonary illnesses. They work under the direction of a physician and consult with the physician during a patient's treatment. Respiratory Therapists treat a wide range of patients in diverse settings, from pediatric ICU patients to elderly patients in long-term care facilities and asthmatic patients in emergency departments. They primarily treat patients using oxygen, other gas mixtures, or aerosolized medications and sometimes employ equipment in the delivery of treatment, such as ventilators, to help patients who cannot breathe on their own.

Employment, Wage, and Education Data: Respiratory Therapist

See Tables 35 and 36, and Figure 12

Summary of Employment, Wage, and Education Data: Respiratory Therapist

Labor market data show little variation in employment conditions for Respiratory Therapists in the Greater Sacramento Region. The employment per population ratio is higher in Solano County. However, estimates of the median wage are consistent across the region, and projected growth rates indicate a strong employment outlook.

There is greater variation in employment conditions across the Northern California

Region. Levels of employment per population are considerably higher in Butte County and in the Northern Valley economic region. And wage estimates show an $11,000/year difference between the median wage in Shasta County and the Eastern Sierra economic region (Alpine County). Projections data are limited, but those available illustrate strong employment growth in the region.

There are currently four Respiratory Therapy programs in the Sacramento/Northern California Region. However, Butte College makes its program available to students at Shasta College through distance education. Shasta College students can attend lecture courses through teleconferencing, but must attend the Butte campus one day per week. However, clinical rotations for

Table 35.
Respiratory Therapist Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Respiratory Therapist	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	120	25	$66,206	2.2%	1.0%	10
Napa	–	–	$68,824	2.5%	1.4%	2
Solano	160†	38†	$61,173	5.0%	1.8%	10
Sacramento MSA	570	27	$63,440	3.1%	2.1%	31

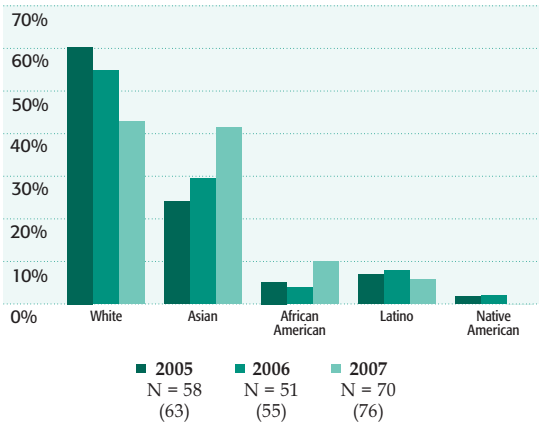
† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

Table 36.
Respiratory Therapist Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Respiratory Therapist	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	60	19	$57,242	–	1.0%	–
North Mountains	60	26	$57,866	4.0%	1.2%	4
North Valley	40†	36†	$57,075	3.3%	1.3%	2
Shasta	50	28	$51,605	–	1.6%	–
Butte	90	41	$56,659	2.5%	1.2%	7
Yuba MSA	–	–	$57,158	–	1.3%	–
Eastern Sierra	–	–	$63,523	0%	1.6%	1

† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

Figure 12.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Respiratory Therapist Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Shasta College students are completed at a clinical site based in Shasta County. Three of the four programs are represented by the student data in Figure 12. A new program at San Joaquin Valley College in Rancho Cordova (Sacramento County) was scheduled to graduate its first class of Respiratory Therapy students in the Fall of 2008 (student data for the 2007-2008 academic year is not yet available).

Data not shown here indicate that the number of Respiratory Therapy graduates had been declining through the late 1990s and early 2000s,[44] most likely the result of structural economic shifts and a new regulation requiring the associate's degree as a condition for licensure. Current data indicate that student enrollment has stabilized and may be increasing in the region. When the new program at San Joaquin Valley College is at full capacity, it may add as many as 45 new graduates per year to the region's supply of new entrants to the workforce.

These data show that women represent 70%-80% of the graduates each year, from the region's Respiratory Therapy programs. These data also indicate that White and Asian students, collectively, have represented over 80% of the graduates each year. However, in recent years the balance between these two groups of students has been shifting in favor of Asian students. According to these data, Latino and Native American students are underrepresented in Respiratory Therapy programs.

RADIOLOGIC TECHNOLOGIST

Description: Radiologic Technologist[45]

Radiologic Technologists are responsible for taking patient x-rays and for the dosing of nonradioactive materials into the bloodstream for diagnostic imaging purposes. This responsibility also includes explaining to patients the radiographic procedure and safety precautions, as well as following precise procedures requested by physicians. The technologist must understand preparation and positioning of the patient and the appropriate use of safety shields to block excess radiation exposure. Radiologic Technologists are also responsible for the development of the film, patient record keeping, and adjustment and maintenance of the equipment.

Employment, Wage, and Education Data: Radiologic Technologist

See Tables 37 and 38, and Figure 13

44 See the authors' 2007 analysis of the supply of health professions graduates in California. Available at: http://futurehealth.ucsf.edu/pdf_files/HWTC%20Tracking%20the%20Supply%207%2026%2007%20FINAL.pdf

45 Labor market data includes **Radiologic Technicians** who have less training a much more limited scope of practice by comparison with **Radiologic Technologists**.

Table 37.
Radiologic Technologist Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Radiologic Technologist	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	200	41	$62,525	1.8%	1.0%	10
Napa	–	–	$62,566	0%	1.4%	1
Solano	200	47	$63,565	4.1%	1.8%	10
Sacramento MSA	850	40	$63,648	3.3%	2.1%	50

Source: California Employment Development Department, Labor Market Information Division

Table 38.
Radiologic Technologist Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Radiologic Technologist	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	100	32	$57,720	2.3%	1.0%	6
North Mountains	100	44	$59,821	2.5%	1.2%	4
North Valley	–	–	$68,058	–	1.3%	–
Shasta	140	77	$55,390	–	1.6%	–
Butte	130	59	$53,976	1.9%	1.2%	6
Yuba MSA	70†	43†	$55,078	–	1.3%	–
Eastern Sierra	–	–	$71,739	0%	1.6%	0

† 2006 Estimated Employment/Employment per Population
Source: California Employment Development Department, Labor Market Information Division

Summary of Employment, Wage, and Education Data: Radiologic Technologist

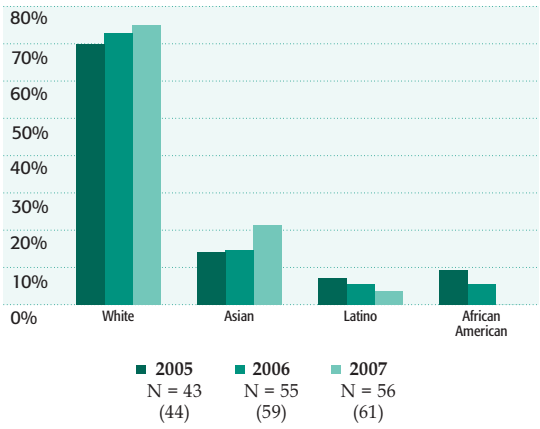
Labor market data show some variation in employment conditions for Radiologic Technologists in the Greater Sacramento Region. The employment per population ratio as well as the median wage is consistent across the region. There are differences in projected growth rates, however. Very strong growth is projected for Solano County, and above average growth for both Sonoma County and the counties of the Sacramento MSA. In contrast, a zero growth rate is projected for Napa County.

It is important to note that these labor market data include technician-level

workers, making it difficult to describe employment conditions for Radiologic Technologists. The data do not include projected demand for specialists in advanced imaging technology such as CT, MRI, PET scanning, etc. Additional training beyond basic radiologic technologist is required to work in these special imaging technologies. Hospitals report shortages for these advanced training imaging technologists.

There is greater variation in employment conditions across the Northern California Region. Levels of employment per population are considerably higher in both Shasta and Butte counties. And wage estimates show a $17,000/year difference between the median wage in the Eastern Sierra economic region (Alpine County) and Butte County. Projections data are limited and indicate a mixed employment outlook, with strong growth projected for the Northern Coast and Northern Mountains economic regions, but zero growth for the Eastern Sierra economic region. Again, these labor market data include technician level jobs, making it very difficult to forecast the outlook for Radiologic Technologists specifically.

Figure 13.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Radiologic Technology Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Radiologic Technology programs typically take 18-24 months to complete, resulting in either an associate's degree (or a certificate for those already in possession of a degree). There are two programs in the Sacramento/Northern California Region: Yuba College and Santa Rosa Junior College. The gender composition of Radiologic Technology graduates is comparatively balanced, with women representing roughly 60% of the total. However, the racial/ethnic composition is concentrated, with White and Asian students collectively representing 85%-95% of the total. There has been only a single Native American graduate reported in the last three years.

EMT/PARAMEDIC[46]

Description: EMT/Paramedic

EMTs and Paramedics provide vital care to patients under emergency conditions. Typically they are dispatched to the scene by a 911 operator and often work with police and fire department personnel. At the scene of an emergency, EMTs and Paramedics determine the nature and extent of the patient's condition, and following strict rules and guidelines, give appropriate emergency care and, when necessary, transport the patient.

Two wage levels are presented in the data below. This is because EMTs and Paramedics are grouped together in the data and median wages give a misleading picture of earnings. We know that the EMT and Paramedic

46 The education program completions data appear to describe paramedic programs, but likely include data describing EMT programs as well.

Table 39.
EMT/Paramedic Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates				Projected Employment Estimates		
			Annual Wage		Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	25th Percentile	75th Percentile	EMT/P	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	–	–	$27,227	$49,130	1.3%	1.0%	6
Napa	–	–	$25,272	$32,677	–	1.4%	–
Solano	–	–	$22,693	$34,861	1.1%	1.8%	4
Sacramento MSA	620	29	$21,944	$35,339	2.4%	2.1%	19

Source: California Employment Development Department, Labor Market Information Division

Table 40.
EMT/Paramedic Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates				Projected Employment Estimates		
			Annual Wage		Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	25th Percentile	75th Percentile	EMT/P	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	250	79	$21,133	$43,014	1.9%	1.0%	16
North Mountains	–	–	$22,006	$32,490	2.0%	1.2%	2
North Valley	–	–	$26,790	$31,554	–	1.3%	–
Shasta	–	–	$18,512	$42,432	1.7%	1.6%	2
Butte	110	50	$30,181	$41,683	–	1.2%	–
Yuba MSA	–	–	$22,630	$34,050	–	1.3%	–
Eastern Sierra	–	–	$27,934	$45,240	0%	1.6%	1

Source: California Employment Development Department, Labor Market Information Division

workforce is generally distributed two-thirds EMTs and one-third Paramedics.[47] EMTs undergo less training and earn significantly lower incomes than do Paramedics. Thus, the median wage is biased downward due to the more heavily represented EMTs. We present wage estimates at the 25th percentile and at the 75th percentile,[48] believing that this better represents the earnings differences between EMTs and Paramedics.

Employment, Wage, and Education Data: EMT/Paramedic

See Tables 39 and 40, and Figure 14

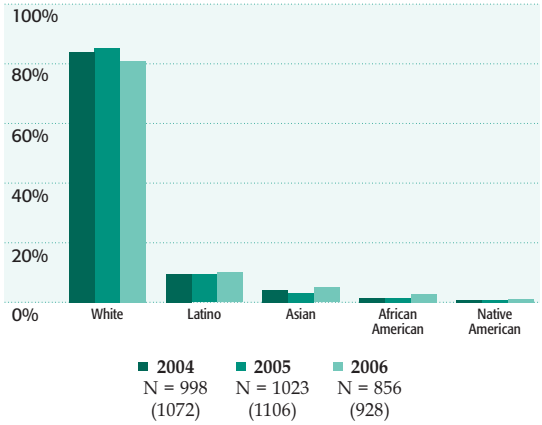
Summary of Employment, Wage, and Education Data: EMT/Paramedic

There is very little labor market data to describe employment conditions for EMTs and Paramedics in the Greater Sacramento Region. As noted above, we used wage

47 National Highway Traffic Safety Administration. (2007). EMS Workforce for the 21st Century: A National Assessment. San Francisco, CA: University of California San Francisco Center for the Health Professions and University of Washington Center for Health Workforce Studies.

48 Workers at the 25th or 75th percentile earn more than 25% or 75% of all other workers in that occupation.

Figure 14.
2004–2006 Racial/Ethnic Composition for Reported Graduates of EMT/Paramedic Programs: Sacramento/ Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

estimates at the 25th and 75th percentile to proxy the difference in earnings between EMTs and Paramedics. At the 75th percentile, there is a roughly $16,000 per year difference in earnings between Paramedics in Sonoma and Napa counties. The much higher wage estimate in Sonoma County also means that the difference in earnings between EMTs (25th percentile) and Paramedics in Sonoma County is much larger by comparison with the rest of the region. According to these data, projected growth of employment for EMTs and Paramedics is expected to be average or below average and these occupations are not expected to be significant sources of employment opportunity.

The lack of labor market data also affects the Northern California Region. The data that stand out are the difference in earnings between EMTs and Paramedics in the North Coast economic region, Shasta County and the Eastern Sierra economic region (Alpine County). Roughly $20,000/year separates wage estimates at the 25th and 75th percentiles for EMTs and Paramedics in these labor markets. Much of the employment projections data for the Northern California Region is unavailable, but what data are available indicate that projected growth of employment for EMTs and Paramedics is expected to be above average only in the North Coast and Northern Mountains economic regions; zero growth is projected for the Eastern Sierra economic region.

There are many types of education training providers for EMTs/Paramedics, including ambulance services and fire departments, as well as community colleges and private schools. We used data for the period 2004-2006 because the data for 2007 were poorly reported. Figure 14 represents community colleges (in all, nine community colleges reported student data). These data indicate that roughly 75% the reported graduates between 2004 and 2006 were men, and that 80%-85% of these graduates were White. However, we identified ten other EMT and Paramedic training programs in the system of Regional Occupation Programs (ROP) and Adult Vocational Schools that were not reporting student data. We do not know how many students are using these programs to pursue EMT or Paramedic training, nor do we know if the racial/ ethnic composition of these students differs from that of students who are trained in the region's community colleges.

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 or Clinical Laboratory Technologist) is a generalist qualified to conduct necessary tests and procedures across this entire range of specialized areas. There is also a category called 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

See Tables 41 and 42

Summary of Employment and Wage Data: Clinical Laboratory Scientist

There is a lack of labor market data to describe employment conditions for Clinical Laboratory Scientists in the Greater Sacramento Region. However, what data are available indicate consistent employment conditions in the region. There is parity in the level of employment per population, and range of median wages shows only a $1,000/year difference between the highest and lowest estimates. In addition, projected growth rates are well above average across the region.

The lack of labor market data describing Clinical Laboratory Scientists also affects the Northern California Region. Data that stand out are the considerably larger employment per population ratio in Butte County, and the relatively consistent estimates of the median wage across the regions (which are comparable to estimates for the Greater Sacramento Region).

The basic requirement for admission to a Clinical Laboratory Science training program is a baccalaureate degree in the natural sciences and the training itself is a 12-month post-baccalaureate program at an approved site. There is a single generalist Clinical Laboratory Scientist program at UC Davis, which trains 12 students each year in affiliation with three regional hospitals.[49] There is also one regional program approved to train the specialist (limited) Clinical Laboratory Scientists in the fields of Immunohematology and Histocompatiblity.[50] It isn't known how many new specialist Clinical Laboratory Scientists these programs train. There are no readily available data describing Clinical Laboratory Science training programs, generalist or specialist. Therefore, we do not include any information on their gender or racial/ethnic composition.

49 The three regional hospitals are Rideout Memorial Hospital in Marysville, CA (Yuba County); Sutter Memorial Hospital in Sacramento (Sacramento, CA); and Memorial Medical Center (Sutter Health) in Modesto, CA (Modesto County).

50 BloodSource in Sacramento, CA.

Table 41.
Clinical Laboratory Scientist Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Clinical Lab Scientist	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	170	35	$73,133	2.2%	1.0%	5
Napa	–	–	$70,450	3.3%	1.4%	2
Solano	–	–	$72,946	3.6%	1.8%	9
Sacramento MSA	780†	37†	$72,010	3.2%	2.1%	45

† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

Table 42.
Clinical Laboratory Scientist Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Clinical Lab Scientist	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	90†	29†	$76,336	–	1.0%	–
North Mountains	50	22	$71,635	2.0%	1.2%	2
North Valley	–	–	$68,494	–	1.3%	–
Shasta	30	17	$76,107	–	1.6%	–
Butte	80	37	$75,858	1.0%	1.2%	4
Yuba MSA	–	–	$73,133	–	1.3%	–
Eastern Sierra	–	–	$77,854	0%	1.6%	0

† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

In addition to the aging of this workforce, a severe decline in the number of training programs and candidates for licensure will be critical factors shaping both regional supply and demand for Clinical Lab Scientists in the future. Between 1975 and 2000, the number of labs in California approved to train Clinical Lab Scientists declined by 90%, from roughly 200 to just 20.[51] In recent years, the number has increased and there are currently 51 different labs, affiliated with 11 different higher education institutions and hospitals, around the state.[52] However, these programs are generally much smaller than other allied health training programs. In some programs, there is a limit of 2-3 students per year because of the need for close supervision and intensive clinical instruction.

51 Thomas, May 2006.

52 Laboratory Field Services, California Department of Public Health

Similarly, the number of candidates for licensure who were trained in California's Clinical Laboratory Science programs declined by approximately 90% in the last two-and-a-half decades, from roughly 860 candidates in 1980 to just 96 in 2005.[53]

PSYCHIATRIC TECHNICIAN

Description: Psychiatric Technician

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 a psychiatric hospital or a mental health clinic. More recently, Psych Techs have been employed in large numbers in mental health correctional facilities.

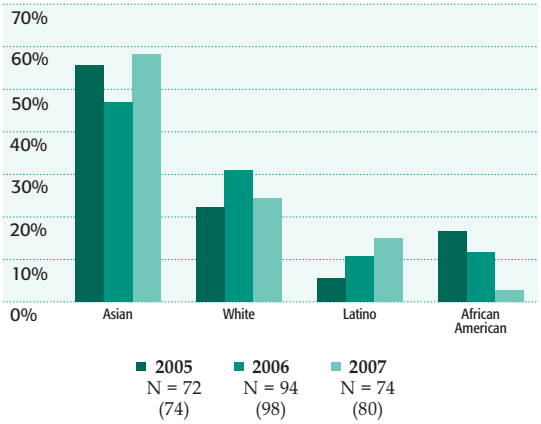
Employment, Wage, and Education Data: Psychiatric Technician

See Tables 43 and 44, and Figure 15

Summary of Employment, Wage, and Education Data: Psychiatric Technician

With the exception of wage estimates, there is almost no available data to describe employment conditions for Psychiatric Technicians across the broader Sacramento/Northern California Region. In both the Greater Sacramento Region and the Northern California Region, roughly $19,000/year separate the highest and lowest wage estimates; and the range of wages is roughly the same in each sub-region. Given the lack of data, the employment outlook for Psych Techs is unclear.

Figure 15.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Psychiatric Technician Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Psychiatric Technician programs are overseen by the California Board of Vocational Nursing and Psychiatric Technicians. There are three approved programs in the Sacramento/Northern California Region: at Napa Valley College, Santa Rosa Junior College, and Yuba College. Collectively, they produce 80-100 new graduates per year. The data indicate that almost all of the graduates come from either Napa Valley College (the largest program) and Santa Rosa Junior College; Yuba College has reported very few graduates over the past three years. The gender composition is comparatively balanced: roughly 60% women, 40% men. The largest racial/ethnic group of graduates is Asian who comprise approximately 60% of the graduates each year. The data also suggest a declining number of African American students and an increasing

53 Thomas, May 2006.

number of Latino students graduating from the region's Psych Tech programs. There have been no Native American graduates reported in the past three years.

Table 43.
Psychiatric Technician Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Psychiatric Technician	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	1100	228	$44,616	0%	1.0%	9
Napa	–	–	$34,050	0.4%	1.4%	12
Solano	–	–	$42,370	2.0%	1.8%	2
Sacramento MSA	–	–	$53,186	2.6%	2.1%	7

Source: California Employment Development Department, Labor Market Information Division

Table 44.
Psychiatric Technician Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Psychiatric Technician	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	–	–	$51,563	0.7%	1.0%	3
North Mountains	–	–	$44,699	–	1.2%	–
North Valley	–	–	–	–	1.3%	–
Shasta	–	–	$32,282	–	1.6%	–
Butte	–	–	$47,611	–	1.2%	–
Yuba MSA	–	–	$45,885	0%	1.3%	1
Eastern Sierra	–	–	–	–	1.6%	–

Source: California Employment Development Department, Labor Market Information Division

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, there are no readily available data to describe graduates of master's level programs in counseling or social work and the type of mental health services they provide. As a result, the correspondence between the mental health professions labor market data 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 also looked at data describing Master of Social Work (MSW) programs. We have organized the labor market data around the available education data. Labor market data describing occupations where workers have likely received training in clinical and counseling psychology are paired with education data describing graduates of clinical and counseling psychology programs at the master's level. Likewise, labor market data describing occupations where workers have probably received training in social work are paired with education data describing graduates of master's in social work programs.

Although the labor market data presented in Tables 45 and 46 technically describe mental health workers 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 and cannot be uniquely identified in the 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 in Figure 17.

MENTAL HEALTH COUNSELOR

Description: Mental Health Counselor

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

Table 45.
Mental Health Counselor Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Mental Health Counselor	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	90	19	$36,982	1.4%	1.0%	8
Napa	–	–	$35,859	1.4%	1.4%	3
Solano	150	35	$43,826	2.1%	1.8%	19
Sacramento MSA	960	45	$50,170	3.4%	2.1%	66

Source: California Employment Development Department, Labor Market Information Division

Table 46.
Mental Health Counselor Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Mental Health Counselor	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	110†	35†	$37,190	0.8%	1.0%	4
North Mountains	30†	13†	$60,881	1.3%	1.2%	3
North Valley	–	–	–	–	1.3%	–
Shasta	–	–	$58,822	1.7%	1.6%	7
Butte	–	–	$44,304	1.5%	1.2%	5
Yuba MSA	–	–	$31,700	2.0%	1.3%	2
Eastern Sierra	–	–	$59,673	10%	1.6%	1

† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

such as Psychiatrists, Psychologists, Clinical Social Workers, Psychiatric Nurses, and School Counselors.

Employment and Wage Data: Mental Health Counselor

See Tables 45 and 46

SUBSTANCE ABUSE/BEHAVIORAL DISORDER COUNSELOR

Description: Substance Abuse/ Behavioral Disorder Counselor

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.

Table 47.
Substance Abuse/Behavioral Disorder Counselor Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Substance Abuse/Disorder Counselor	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	240	50	$31,574	1.3%	1.0%	6
Napa	–	–	$36,837	–	1.4%	–
Solano	110	26	$33,987	3.1%	1.8%	7
Sacramento MSA	270	13	$33,821	3.2%	2.1%	43

Source: California Employment Development Department, Labor Market Information Division

Table 48.
Substance Abuse/Behavioral Disorder Counselor Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Substance Abuse/Disorder Counselor	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	90	29	$33,259	1.4%	1.0%	5
North Mountains	30†	13†	$32,053	–	1.2%	–
North Valley	–	–	$41,080	–	1.3%	–
Shasta	–	–	$48,776	–	1.6%	–
Butte	60†	28†	$49,858	3.3%	1.2%	3
Yuba MSA	30†	18†	–	2.0%	1.3%	2
Eastern Sierra	–	–	$53,269	0%	1.6%	0

† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

Counselors also conduct programs aimed at preventing addiction from occurring in the first place. Counseling sessions are designed for individuals, families, or groups.

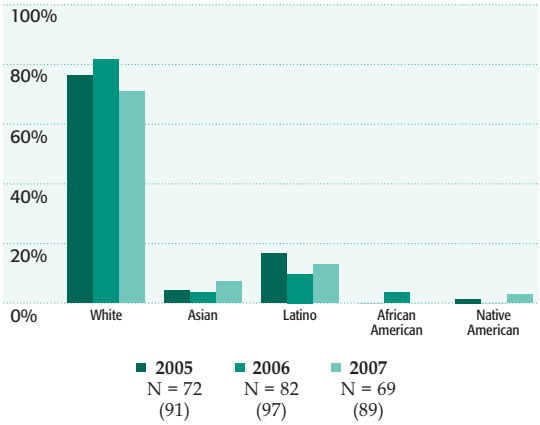
Employment and Wage Data: Substance Abuse/Behavioral Disorder Counselor

See Tables 47 and 48

Education Data: Master's and Doctoral-Level Programs in Psychology; Associate Degree Programs in Substance Abuse/Addiction Counseling

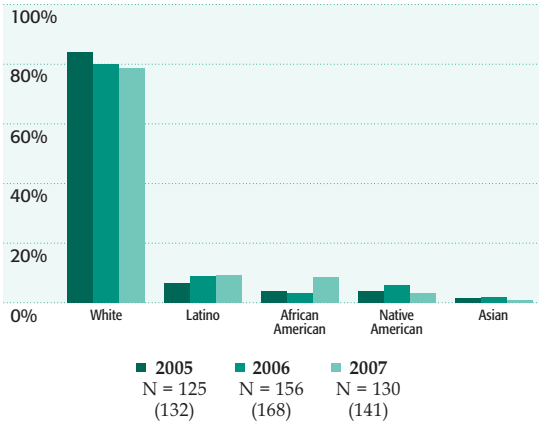
See Figures 16 and 17

Figure 16.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Master's Level Programs in Clinical or Counseling Psychology: Sacramento/ Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Figure 17.
2005–2007 Racial/Ethnic Composition of Graduates of Substance Abuse/Addiction Counseling Programs at the Associate's-Degree Level: Sacramento/ Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Summary of Employment, Wage, and Education Data: Mental Health Counseling Professionals

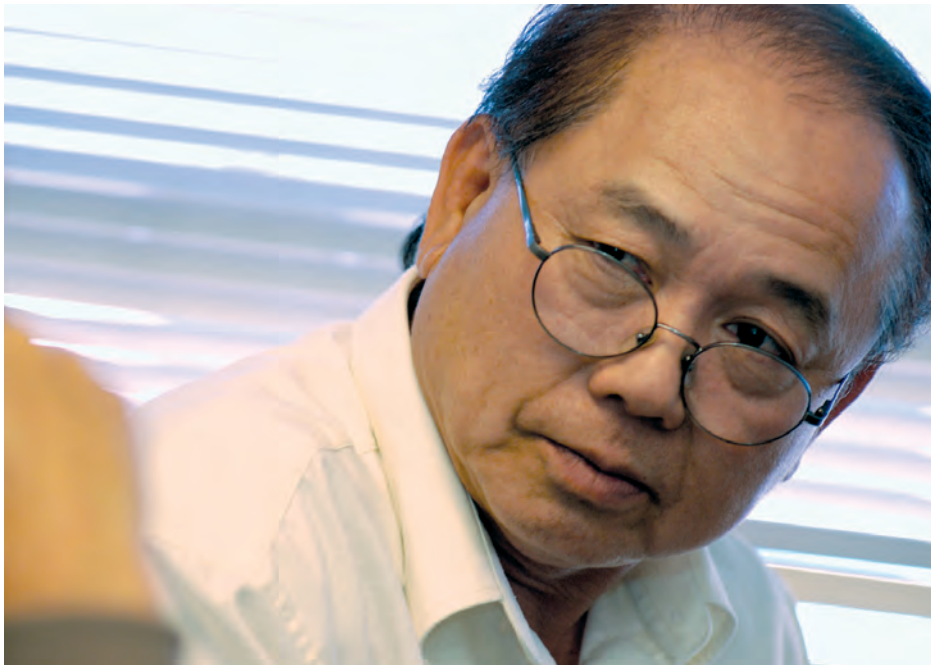
Labor market data describing employment conditions for Mental Health Counselors in the Greater Sacramento show that employment is concentrated in Solano County and the counties which make up the Sacramento MSA. These data also indicate that median wages are comparatively higher in these parts of the region, and that employment is projected to grow more rapidly.

The data describing employment conditions for Mental Health Counselors in the Northern California Region are incomplete. Wage data indicate a broad range of earnings across the region; roughly $29,000 per year separates the highest (Northern Mountains economic region) and lowest (Yuba/Sutter counties) estimates of median wage. Projections data indicate comparatively weak employment growth, with the exception of Alpine County (Eastern Sierra economic region). But this is a small workforce and rapid growth is not expected to translate into significant opportunity; fewer than five new job openings per year are projected for most of the region.

For Substance Abuse/Behavioral Disorder Counselors in the Greater Sacramento Region, the data indicate variable employment conditions. The level of employment per population is two to four times higher in Sonoma County by comparison with the rest of the region. However, projected growth rates indicate a stronger outlook for Solano County and the counties which make up the Sacramento MSA. Median wages are consistent throughout the region, and are generally lower in comparison to Mental Health Counselors.

Labor market data for Substance Abuse/ Behavioral Disorder Counselors in the Northern California Region show that wages for this occupation are generally higher by comparison with the Greater Sacramento Region, which is a reversal of the general pattern seen with other allied health occupations. These data also show a wide range in earnings across the region; roughly $21,000 per year separates the highest estimate (Alpine County/ Eastern Sierra economic region) and lowest estimate (Northern Mountains economic region). Projected growth is strongest in Butte County; zero growth is projected for Alpine County (Eastern Sierra economic region). Substance Abuse/ Behavioral Disorder Counselors represent a small workforce and so the number of annual job openings will also be small.

In comparing the employment conditions and outlook for Mental Health Counselors and Substance Abuse/Behavioral Counselors in the Greater Sacramento Region, there are a few data points that stand out. In Sonoma County, and the counties that make up the Sacramento MSA, employment per population ratios for these two occupations are near mirror images of one another: Mental Health Counselor employment per population is large in those counties that make up the Sacramento MSA and small in Sonoma County; Substance Abuse/ Behavioral Counselor employment per population is large in Sonoma County and small in those counties that make up the Sacramento MSA. Median wages for these two occupations are roughly comparable in Sonoma and Napa counties, but wages for Mental Health Counselors are considerably higher in Solano County and the counties that make up the Sacramento MSA.



As with several other occupations discussed earlier, the coverage of the data is less extensive for occupations that have a self-employment component. In this case, the annual number of job openings due to growth and turnover for Mental Health Counselors and Substance Abuse/ Behavioral Disorder Counselors may be understated for those (trained at the graduate level) who may be self-employed.

Master's level training opportunities for mental health professionals are concentrated in the region's California State University institutions. Sacramento State, Sonoma State, Chico State, and Humboldt State all offer master's programs that prepare graduates to be licensed as Marriage and Family Therapists. Data in Figure 16 are

limited in that they do not distinguish between MFT graduates and those that have concentrated in other areas of counseling such as school psychology.

Collectively, these four programs produce 90-100 new master's graduates each year, who are mainly women and mainly White. Latino students are reasonably well represented (when using population parity as a benchmark), and there is a small number of Asian graduates. However, very few African American and Native American graduates have been reported in the last three years. At the same time, the proportion of graduates whose race/ethnicity is unreported is comparatively large for these programs. We do not know how racial/ethnic composition might change were these students' race/ethnicity identified.

In addition to master's level programs in counseling psychology there are nine regional community colleges reporting graduates of Substance Abuse Counseling programs at the associate's degree level. Collectively, they produce roughly 150 graduates per year and these graduates are mainly women and mainly White. Using proportional representation in the region's general labor force as a benchmark, all non-White racial/ethnic groups would be considered underrepresented.

Other potential sources of training for entry-level paraprofessionals working in areas of mental/behavioral health counseling are the region's community colleges that offer a degree program in Human Services. Programs in Human Services typically offer concentrations in several areas, including mental/behavioral health counseling. Available data indicate that graduates of Human Services programs offered by the region's community colleges are comparatively racially/ethnically diverse (White students represent roughly 55% of graduates and only Native American students would be considered underrepresented). However, these student data are too broad to offer any indication of whether, or how many graduates have received training that would likely lead to employment in fields of mental health.

MENTAL HEALTH/SUBSTANCE ABUSE SOCIAL WORKER

Description: Mental Health/ Substance Abuse Social Worker

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/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: Mental Health/Substance Abuse Social Worker

See Tables 49 and 50

Table 49.
Mental Health/Substance Abuse Social Worker Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Mental Health Social Worker	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	1280	266	$29,786	1.1%	1.0%	33
Napa	–	–	$30,202	–	1.4%	–
Solano	230	54	$50,565	2.9%	1.8%	10
Sacramento MSA	760	36	$40,331	2.4%	2.1%	28

Source: California Employment Development Department, Labor Market Information Division

Table 50.
Mental Health/Substance Abuse Social Worker Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Mental Health Social Worker	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	–	–	$42,058	–	1.0%	–
North Mountains	150	65	$38,355	1.4%	1.2%	2
North Valley	–	–	$44,158	–	1.3%	–
Shasta	130	72	$38,320	2.0%	1.6%	4
Butte	–	–	$34,195	0%	1.2%	1
Yuba MSA	40	24	$31,179	0%	1.3%	1
Eastern Sierra	30	89	$37,461	0%	1.6%	0

Source: California Employment Development Department, Labor Market Information Division

MEDICAL/PUBLIC HEALTH SOCIAL WORKER

Description: Medical/Public Health Social Worker

Medical/Public Health Social Workers are typically trained at the master's 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 Meals On Wheels to oxygen equipment. They are involved with some work on interdisciplinary teams that evaluate certain kinds of patients, such as geriatric or organ transplant patients. Medical/Public Health Social Workers may

Table 51.
Medical/Public Health Social Worker Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Mental Public Health Social Worker	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	100†	21†	$64,230	2.0%	1.0%	4
Napa	30	22	$66,227	1.9%	1.4%	6
Solano	90	21	$63,731	2.5%	1.8%	5
Sacramento MSA	780	37	$58,011	2.1%	2.1%	25

† 2006 Estimated Employment/Employment per Population
Source: California Employment Development Department, Labor Market Information Division

Table 52.
Medical/Public Health Social Worker Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Mental Public Health Social Worker	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	80	25	$50,648	–	1.0%	–
North Mountains	–	–	$48,433	0%	1.2%	1
North Valley	30	27	$70,054	–	1.3%	–
Shasta	60	33	$43,950	2.0%	1.6%	4
Butte	40	18	$40,102	0.9%	1.2%	3
Yuba MSA	40†	25†	$57,158	2.5%	1.3%	2
Eastern Sierra	–	–	$68,723	0%	1.6%	0

† 2006 Estimated Employment/Employment per Population
Source: California Employment Development Department, Labor Market Information Division

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: Medical/Public Health Social Worker

See Tables 51 and 52

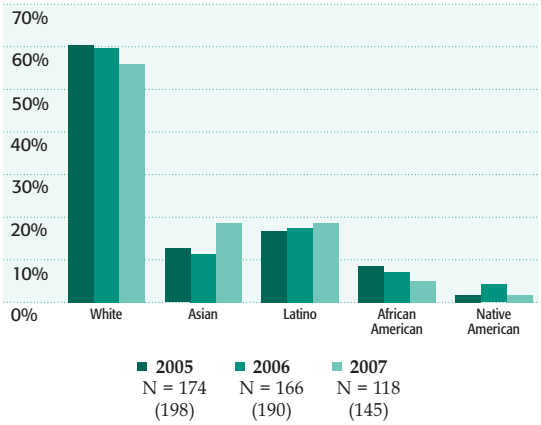
Education Data: Master of Social Work

See Figure 18

Summary of Employment, Wage, and Education Data: Master's Level Mental Health Social Work Professionals

Labor market data reveal large differences in employment conditions for Mental Health/

Figure 18.
2005–2007 Racial/Ethnic Composition for Reported Graduates of Master of Social Work Programs: Sacramento/Northern California Region



Source: Integrated Postsecondary Education Data System (IPEDS)

Substance Abuse Social Workers in the Greater Sacramento Region. Employment per population is five to eight times as large in Sonoma County compared with the rest of the region. Conversely, the estimated median wage in Sonoma County is $10,000 per year less than in Solano County and $20,000 per year less than in the counties which make up the Sacramento MSA. Employment projections indicate strong growth is expected only in Solano County.

Employment conditions for Mental Health/Substance Abuse Social Workers in the Northern California Region also vary. Relative to the population, there are very few Mental Health/Substance Abuse Social Workers in Butte County, in the North Coast economic region, or in Yuba/Sutter counties, compared with the rest of the region. The range of median wages is narrower by comparison with the Greater Sacramento Region, but the median wage is $4,000-$5,000 per year lower in Butte County and in Yuba/Sutter counties. Mental Health/Substance Abuse Social Worker is not a fast-growing occupation in the Northern California Region, nor is it expected to be a significant source of employment opportunity. For several counties in the region, zero growth is projected.

Labor market data indicate relatively consistent employment conditions for Medical/Public Health Social Workers in the Greater Sacramento Region. The employment per population ratio is larger in the counties that make up the Sacramento MSA. However, the range of median wages is comparatively narrow. The projected rates of growth are also comparable across the region.

There is greater variation in employment conditions Medical/Public Health Social Workers in the Northern California Region. The level of employment per population is comparatively lower in Butte County and the Northern Mountains Region, and relative to the Greater Sacramento region, the range of median wages is much broader; roughly $30,000 per year separates the highest estimate (the Northern Valley economic region) from the lowest estimate (Butte County). Strong employment growth is projected for Yuba/Sutter counties, but in many other parts of the region, little to no growth is expected.

In comparing the employment conditions and outlook for Mental Health/Substance Abuse Social Workers and Medical/Public Health Social Workers in the Greater Sacramento Region, certain data stand out. With the exception of the Sacramento MSA, the Mental Health/Substance Abuse

Social Worker workforce is a much larger workforce. In contrast, Medical/Public Health Social Workers earn higher wages. In both Sonoma and Napa counties, the estimated median wage for Medical/Public Social Workers is approximately double that of Mental Health/Substance Abuse Social Workers; in the Solano County and the counties that make up the Sacramento MSA the difference is roughly $15,000 per year. However, Mental Health/Substance Abuse Social Workers are expected to have more opportunities for employment.

A comparison of employment conditions and outlook for Mental Health/Substance Abuse Social Workers and Medical/Public Health Social Workers in the Northern California Region offers less clarity. For several counties, the Mental Health/Substance Abuse Social Worker workforce is considerably larger, but for other counties the occupations are very close in size; and in the North Coast economic region, Medical/Public Health Social Workers are the larger workforce. However, across the region, Medical/Public Health Social Workers consistently earn higher wages. According to employment projections data, Medical/Public Health Social Workers may also have better job prospects, although neither occupation is expected to be a significant source of employment.

The major sources of formally trained mental health social work professionals are the region's California State Universities that offer the Master of Social Work (MSW) degree: Chico State, Sacramento State, and Humboldt State. Sonoma State has recently implemented a distance education MSW program, but has not yet graduated any students.[54] All of the region's MSW programs participate in the Mental Health Services Act educational stipend program,[55] which offers financial support for second-year MSW students who are committed to practicing in the public mental health system. The MSW program at Humboldt State also has an express interest in developing professionals who will work in the North Coast region, and focus on the needs of the region's Native American population.

The number of MSW graduates declined sharply between 2006 and 2007 as a result of fewer graduates of the region's largest program at Sacramento State, which reported one-half as many graduates in 2007 as it did in 2005.[56] Collectively these three programs produced roughly 150 new graduates in 2007. About 85%-90% of the region's MSW graduates are women, but their racial/ethnic composition is much more diverse.

Using the benchmark of proportional representation in the general labor force, African American and Asian students are well represented. Latino students remain slightly underrepresented, but these data indicate that their presence in the region's MSW programs is increasing. The exception is Native American students; in two of the three years of reported data, Native Americans accounted for less than 2% of the total number of graduates. However, the proportion of graduates for who race/ethnicity was unreported is much larger compared with other selected allied health education programs; in 2007, roughly 18% of all reported graduates were unidentified in terms of race/ethnicity. We do not know how

54 Sonoma State is partnering with CSU Long Beach to offer a single-cohort 3-year distance-learning M.S.W. degree beginning in the fall of 2007. The degree is offered through CSU Long Beach, with Sonoma State providing host campus facilities. More information at: http://www.sonoma.edu/Psychology/masterssocialwork.htm

55 For more information see: http://www.dmh.ca.gov/Prop_63/MHSA/docs/MHSA_FiveYearPlan_4-22-08.pdf

56 Data available through the California State University, Department of Analytic Studies confirms that the number of graduates reported in 2008 was also much smaller by comparison with earlier years.

the overall racial/ethnic composition of the region's MSW graduates would change if the race/ethnicity of these students was known.

Although quantitative information describing the state of geriatric social work education is not readily available, there is a growing effort to promote expertise in geriatrics and aging in social work education and practice. The Council on Social Work Education has sponsored the Geriatric Social Work Initiative,[57] which is a multifaceted effort meant to prepare a geriatric- focused social work workforce. In California, this initiative was responsible for several major grants awarded to the state's schools of social work to develop practicum partnerships bringing together educational institutions and both public and private social work agencies, and developing new curricula to train the state's future workforce.

This initiative, the grants they made possible, and the work accomplished through these grants have served as the basis for the California Social Work Education Center (CalSWEC) Aging Initiative: Aging Competencies.[58] CalSWEC, whose main office is housed at UC Berkeley, is a statewide coalition represented by leaders in social work education and practitioners from both the public and private sector.[59] The aging competencies initiative is focused on developing a curriculum in social work education that will effectively train aging specialists who will then provide high quality geriatric services within the network of health, mental health, and social services. Among the key competencies this curriculum initiative seeks to instill are those that recognize the importance of cultural diversity, social and economic disadvantage, and the value of culturally competent social work.

CSU Chico received funding in 2002 to develop sustainable curricular changes in social work education focused on producing a geriatric workforce. The school was also awarded a three-year grant (2006-2009) as part of the Hartford Partnership Program in Aging Education, which allows CSU Chico to offer students in the MSW program specialized training opportunities in the field of gerontology. Chico State also participates in the California State Universities Online Gerontology Consortium, which allows its students to engage online coursework in gerontology offered at any of the participating CSU universities (Chico, East Bay, Fullerton, Fresno, Northridge, and Sonoma).

Other sources of training for the region's Geriatric Social Work workforce include:

UC Davis

- Minor concentration in Aging and Adult Development as part of an undergraduate program in Human Development and Family Studies

Sonoma State University

- Certificate program in Gerontology
- Minor concentration in Gerontology for students majoring in a complimentary field such Social Work, Psychology, Nursing, or Human Services
- Interdisciplinary studies master's degree with a concentration in Gerontology

57 More information can be found at http://www.gswi.org/

58 More information can be found at http://calswec.berkeley.edu/CalSWEC/Aging_About.html

59 It brings together California's 19 accredited social work graduate programs, the state's 58 county departments of social services and mental health, the California Department of Social Services, and the state's chapter of the National Association of Social Workers.

Sacramento State University

- Undergraduate degree in Gerontology
- Graduate level certificate in Gerontology
- Specialized master's degree where students concentrate on Gerontology and one other area of study

Regional Community Colleges

- Associate degree programs in Human Services with a focus on Gerontology at several of the region's community colleges

Public and Community Health Professionals

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 public/community health occupations. This means that we are only able to broadly describe labor market conditions and educational training programs for the selected public/community health occupations, which include Public/Community Health Educator and Medical/Public Health Social Worker. Data describing employment conditions for Medical/Public Health Social Workers was presented previously. Data describing employment 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 clear whether Medical/Public Health Social Workers are trained in Master of Public Health (MPH) programs or Master of Social Work (MSW) programs. They may be trained in both types of programs. Education data describing MSW programs was presented previously.

At the graduate level there is only one formal public health program in the Sacramento/Northern California Region, at UC Davis, which currently graduates roughly 10-15 students each year.[60] Other potential sources of formally trained public health workers are the undergraduate health sciences programs at Sacramento State and Chico State, as well as the region's community colleges that offer concentrations in Community Health or a related field as part of an associate degree program in Human Services.

PUBLIC/COMMUNITY HEALTH EDUCATOR

Description: Public/Community Health Educator

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, Wage, and Education Data: Public/Community Health Educator

See Tables 53 and 54

60 UC Davis has plans to expand its presence in the field of public health by opening a new School of Public Health. For more information on this initiative see: http://sph.ucdavis.edu/

Table 53.
Public/Community Health Educator Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Greater Sacramento Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Health Educator	Average (All Occupations)	Avg. # of Job Openings Per Year
Sonoma	140	29	$32,490	1.4%	1.0%	2
Napa	40	30	$53,560	0%	1.4%	1
Solano	140	33	$55,910	3.3%	1.8%	3
Sacramento MSA	840	40	$62,109	1.4%	2.1%	27

Source: California Employment Development Department, Labor Market Information Division

Table 54.
Community Health Educator Current Employment Estimates and 2004-2014 Projected Employment Estimates by County: Northern California Region

County	Current Employment Estimates			Projected Employment Estimates		
				Annual Growth Rate		
	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Health Educator	Average (All Occupations)	Avg. # of Job Openings Per Year
North Coast	100	32	$34,362	0.9%	1.0%	6
North Mountains	80	35	$38,147	1.7%	1.2%	2
North Valley	–	–	$47,528	–	1.3%	–
Shasta	–	–	$57,242	–	1.6%	–
Butte	60	27	$34,674	–	1.2%	–
Yuba MSA	40†	25†	$28,330	0%	1.3%	1
Eastern Sierra	–	–	$50,315	0%	1.6%	1

† *2006 Estimated Employment/Employment per Population*
Source: California Employment Development Department, Labor Market Information Division

Summary of Employment, Wage, and Education Data: Public/ Community Health Educator

Labor market data show significant regional differences in current employment conditions for Public/Community Health Educators. The employment per Labor market data indicate a higher level of employment per population for Public/Community Health Educators among the counties that form the Sacramento MSA; employment per population is consistent in the rest of the Greater Sacramento Region. The range of estimated median wages shows considerable variation, however; roughly, $29,000 per year separates the highest estimate (Sacramento MSA) from the lowest estimate (Sonoma County). Well above average growth is projected for the counties that make up the Sacramento MSA. However, in the

There are no consistent data describing wages for CHWs in California, but some local departments of public health have developed a formal job classification for Community Health Workers. We found that such classifications exist within the county health departments for almost all of the counties in the Sacramento/Northern California Region.

rest of the region, projected growth rates are average to below average (and zero growth is projected for Napa County). This is a comparatively small workforce and is not expected to be a significant source of employment opportunity.

The available labor market data for Public/Community Health Educators in the Northern California Region show consistent levels of employment per population, but a wide range in the estimated median wage. As in the Greater Sacrament Region, roughly $29,000 per year separates the highest estimate (Shasta County) from the lowest estimate (Yuba/Sutter counties). Projected growth rates indicate this is neither a fast-growing occupation nor one expected to offer many employment opportunities.

There is only one master's level public health program in the region at UC Davis, which has reported fewer than 15 graduates in each of the past three years. Over one-half of the reported graduates are unidentified by race/ethnicity. Other potential sources of new entrants to the region's public/community health workforce are the undergraduate health sciences programs at Chico State and Sacramento State. Both of these programs offer concentrations in Community Health. Student data indicate that graduates of these programs are mainly Asian and White. In each of the past three years, approximately 60% of reported graduates have been White and another 20%-25% have been Asian. However, the proportion of students whose race/ethnicity was not identified was between 10%-15% of the total in each of these years.

The region's community colleges that award the associate's degree in Human Services may be another source in the region's supply of public/community health workers with formal training. Some of these programs may offer concentrations in Community Health or Health Education. Unfortunately, student data are not reported in a way that allows us to quantify and describe this part of the supply chain.

COMMUNITY HEALTH WORKER AND HEALTH CARE INTERPRETER

Community Health Workers (CHWs) are not identified by available labor market data.[61] A national study[62] of CHWs, 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 California. The accuracy of these estimates has not been established. There are no consistent data describing wages for CHWs in California, but some local departments of public health have developed a formal job classification for Community Health Workers. We found that such classifications exist within the county health departments for almost all of the counties in the Sacramento/Northern California Region.[63]

Within county public health departments, the Community Health Worker classification is typically an "occupational series", which means that there is a stepwise pattern for advancement. For example, in Mendocino County three classes of Community Health Worker correspond with increasing levels of responsibility (and earnings). The entry-level wage for a CHW trainee is approximately $23,000/year, but the most experienced CHWs earn closer to $36,000/

61 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.

62 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.

63 In some counties we were not able to find searchable database containing job description/salary information.

year.[64] The minimum qualifications for an entry-level position typically include evidence of experience working with culturally diverse populations in the context of providing community services, as well as bilingual ability. In some cases, possession of a formal "Community Health Worker Certificate" is also recognized as a partial substitute for experience.

Community Health Worker is an emerging occupation, and its job tasks and responsibilities vary depending on the workplace setting. CHW's typically function as part of a public health program to increase health care access for underserved communities, including limited-English speakers, new immigrant populations, and low-income populations. 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. Although it is difficult to assess the demand and supply of CHWs, regional workforce planners should expect growth in this field, particularly to care for the growing number of uninsured expected to access care in community settings.

Data describing the demographic profile of CHWs in California are 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 (39%), Latino (35%), African American (16%), Native American (5%), and Asian/Pacific Islander (5%).

CHW training is often conducted on the job, as illustrated by the stepwise career ladders within county health departments. Currently, very few institutions in California offer a degree or certificate program for CHWs. However, there is an emerging framework to provide formal training for Community Health Workers in California at the post-secondary level. 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, which can then be used to establish undergraduate programs at college campuses across California and the rest of the nation. In the Sacramento/Northern California Region, we were able to identify only one formal Community Health Worker training program:

- Santa Rosa Junior College (Sonoma County)

Santa Rosa Junior College has reported fewer than five graduates per year, in each of the past two years. The region's community colleges that offer a Human Services degree could also be a source of formally trained Community Health Workers. As noted previously, student data are not reported in a way that would allow us to say whether or how many graduates of these programs have been trained to work in community health.

Health Care Interpreters are also not identified by the available labor market data.

64 The range of potential CHW wages within a county varied across the region. However, entry-level wages were typically in the range of $28,000-$30,000/year with more experienced workers earning $38,000-$42,000/year.

According to a 2003 study, the California Healthcare Interpreters Association (CHIA) claimed that there were fewer than 500 professional Health Care Interpreters working in the state at that time. Only a fraction of the workforce had been formally trained and was working full-time as an interpreter.[65] This same study cited an hourly mean wage of roughly $16 per hour, but it emphasized that "independent interpreters with outstanding credentials may command relatively high salaries,"[66] as much as $100 per hour.

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 care 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 assuring 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. There has been recent legislation and policy mandating the use of trained health interpreters. Regional workforce planners should assess regional demand and supply for this expected increase in the field of health care interpreting.

We did not find any information that could be used to generate descriptive information on employment conditions for Healthcare Interpreters in the region. We did not find any county health departments in the region with formal job classification information. This kind of information may be available from personnel departments within the region's hospitals and other healthcare providers. There are no data to describe the demographic profile of this workforce; however, since the essential job function is the ability to speak a non-English language, it is probably a racially and ethnically diverse group of professionals.

There are also no data available to describe graduates of Healthcare Interpreters training programs. According to the 2003 study cited above, the duration of formal programs ranges from 30 hours to more than 600 hours, but these programs are most commonly 40 hours in length. They typically cover roles and ethics, basic interpreting techniques, health and medical terminology, and the role of cultural values in the experience of health care. Likely sources of training in the region are hospitals and healthcare providers, as well as county health and human services departments. They may develop their training courses in-house or use a proprietary training model such as *Connecting Worlds*[67] or *Bridging the Gap*.[68] We were able to identify only one formal Health Care Interpreter programs in the Sacramento/Northern California Region:

- The Hmong Women's Heritage Association[69] (Sacramento County) offers a five-day, 40-hour training program utilizing the *Connecting Worlds* curriculum.

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

66 Ibid.

67 For more information see: http://www.palsforhealth.org/interptraining.htm

68 For more information see: http://www.xculture.org/BTGwelcome.php

69 The Hmong Women's Heritage Association is a non-profit, community-based organization focused broadly on empowering Hmong women and their families in the greater Sacramento region.

Conclusion

The purpose of this report is to help workforce professionals and policymakers engage in a strategic effort to develop the Sacramento/Northern California Region's allied health workforce. The report provides basic data describing key workforce components: the region's population (and potential pool of labor); the current health professions workforce; and recent graduates of regional allied health professions education programs, who represent the potential pool of new entrants to the workforce. The framework of the analysis is focused on the racial and ethnic composition of these groups and the workforce implications. These data are meant to facilitate discussion and planning to address issues of occupational demand and educational capacity. The population data inform planning for other workforce preparation such as ESL training and college readiness.

The Greater Sacramento Region's current population of just over 3 million people is projected to grow by about 1.1 million over the next 25 years. More than half of this growth is projected to occur in two counties: Sacramento and Solano. Latino and Asian population growth in the region will drive overall population growth in the next 20 years, accounting for roughly 95% of total growth. In both Napa and Sonoma counties, the proportion of the population identified as Latino is expected to double in size, and in both counties Latinos are projected to represent a majority of the under-17 population. The phenomenon of an aging population will also affect the Sacramento/Northern California Region. In the Greater Sacramento Region, the population over the age of 65 is expected to more than double in size between 2005 and 2030.

The Northern California Region's current population of roughly 1.4 million people is projected to increase by roughly 50% during this period, a more rapid growth rate compared with both the Greater Sacramento Region and California. Three counties will represent over half of this growth: Butte, Sutter, and Yuba counties. Sutter and Yuba counties are the two projected, fastest-growing counties in California over the period 2005-2030, and the size of the Latino population is expected to triple in size during this period. In addition, Del Norte, Humboldt, and Mendocino counties are expected to see very strong Native American population growth.

Across the Northern California Region, growth of the 65 and over population combined with a declining under-17 population is cause for concern. This demographic shift will have an impact on the workforce. It is likely to change the mix and type of human resources needed to care for the dependent population, including the need for allied health workers to provide services in acute and long-term care settings and in the home.

Other factors expected to drive health care job creation include emerging medical technologies, regulatory shifts in scope of practice, as well as changes in health care delivery setting (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.

Regional workforce planning groups should use these data to address differing allied health workforce needs across settings. For example, hospitals may be more concerned about increasing the supply of Respiratory Therapists and Imaging Technologists. Long term care settings have a need for home health aides and nursing assistants while community clinics may be looking to hire more medical assistants.

Allied health occupations will be an important source of employment opportunity in the region. The greatest number of opportunities will come in the form of entry-level occupations that are near the bottom of the wage scale. However, there are also mid-level occupations that have a strong employment outlook. These occupations typically require as associate's degree or completion of a two-year certificate program. The challenge in developing a more diverse allied health care workforce will be to attract Latino, African American, Native American, and underrepresented Asians into higher-level education programs. This will require a continuing effort to recruit these students into the region's associate degree education programs and assisting entry-level incumbent workers to advance along established career ladders that lead to occupations involving greater decision-making, greater responsibility, and that earn higher wages.

Unfortunately, there are no readily available data describing career ladder programs, neither where they are located, the specific career paths they serve, nor the extent to which they are accessed by workers. Often, career ladder programs are developed within a regional partnership of educators and providers. There is a need for more standardization of pathways and requirements in order to make career ladders a reality for the vast numbers of low-wage, entry-level health care workers.

Increasing awareness about the opportunities in allied health occupations should also be a focus of regional workforce planning. Younger people need to be aware of and prepared to enter occupations in the allied health workforce. Although we do not present data specific to the region, there is a growing "achievement gap" among high school graduates in the state that correlates

with race, ethnicity, and income.[70] 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.[71] Other working age adults could be a source for allied health education and training programs. Needed entry-level skills and certain proficiency requirements may present challenges in some parts of the region where English proficiency and other skills are lacking. Partnerships to raise the profile of allied health occupations could include high schools, employers, community colleges, universities, and community groups.

Access to allied health occupations training is widespread at the entry-level, where opportunities are often available through career education programs administered by county school districts, including Adult Schools and Regional Occupations Programs (ROP). We identified nearly 60 entry-level allied health care occupations training programs across the broader Sacramento/Northern California Region offered by either an Adult School or an ROP. Specific training programs are developed and maintained according to local business needs, which means that there is a certain amount of "churning" from year to year; a Pharmacy Technician training program available in one year may not be offered the following year if local demand has shifted. Unfortunately, there are no readily available data describing either the total number, or the gender and racial/ethnic profile of students who are trained in these programs.

In addition to the region's ROPs, Adult Schools, and community colleges, there are a growing number of private schools offering entry-level allied health education programs. Private schools providing entry-level training may offer greater program flexibility and easier access, as well better career development support compared with regional ROPs, Adult Schools, and community colleges. However, this comes at a greater financial cost to the student. A single year of education in a private, for-profit institution may cost in excess of $20,000 per year, compared with the roughly $1200 per year it costs to attend a California community college.

Regional workforce planners should develop a better understanding of the private schools' role in regional education; including how and why private, for-profit institutions have come to dominate the market for entry-level health occupations training. This may help in the development of less costly alternatives. In any case, increasing tuition assistance and loans should be considered as part of any regional workforce plan.

Two other issues that affect the Northern California Region are the significant size of the Native American population, and the fact that a significant portion of the region's geography is rural, as well as mountainous and remote. The health issues that uniquely affect the Native American population are well documented, and for decades, there have been state-level efforts to develop a coordinated system of health care delivery to address these issues, with some success. Two of the principle organizations that work to maintain tribal health systems are the

Regional workforce planners should develop a better understanding of the private schools' role in regional education; including how and why private, for-profit institutions have come to dominate the market for entry-level health occupations training.

70 It is our assumption that these differences exist among high school students in the Bay Area Region as well.

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

Indian Health Program[72] and the California Rural Indian Health Board (CRIHB).[73] In addition to preparing evaluation studies and reports on the health status of the state's American Indian/Alaska Native population, and advocating for legislative action to improve its general health and social status, these organizations provide financial and technical assistance to these clinics.

In addition to its support of clinical sites and legislative advocacy, the California Rural Indian Health Board also supports the development of Native American health professionals. The organization was recently awarded a grant from the California Wellness Foundation to support a scholarship program for Native American Indian students who choose to pursue health professions education.[74] Priority consideration is given to students enrolled in an accredited nursing degree program, and working professionals who are employed by one of the clinics that serve a California Tribal Health Program. Given the lack of representation of Native American students among health professions education programs, particularly in advanced degree programs, the scholarship program is an important part of the broader strategy to address health disparities and develop a culturally competent health care workforce.

In terms of addressing the satellite of rural health issues, a key intermediary is the Northern Sierra Rural Health Network.[75] Its mission is to promote healthy rural communities in Northern California and it does so, in part, through serving as a collaborative model for comprehensive health care planning. The Northern Sierra Rural Health Network includes member hospitals and community clinics covering nine counties in the northeast part of California. Several of the stated values and goals of the organization concern strategic health care workforce development. These include quality of life issues for health care providers that address workforce retention and sustainability of practice communities, as well as expanding access to health care resources and services for underserved communities.

The North/Far North Regional Health Occupations Resource Center (RHORC),[76] located at Butte Community College, is also an important intermediary focused on strategic health care workforce development in California's northern counties. It provides a network for the regional health care industry, and both government and educational institutions, to address workforce issues such as employment needs, student access to training opportunity, and resource planning. It is a key stakeholder in the development of the region's post-secondary education pipeline in allied health.

Finally, Siskiyou County recently passed a $31 million bond measure that will fund the building of a new Rural Health Sciences Training Institute.[77] Bond funding will also be directed toward expanding the college's capacity to deliver training via distance education technologies.[78] The health sciences institute has plans to offer a range of programs in nursing, entry-level pharmacy, medical imaging, dental assisting and hygiene, as well as deliver training in fields of social work and mental health through distance education.

72 See: http://www.dhcs.ca.gov/services/rural/Pages/IndianHealthProgram.aspx

73 See: http://www.crihb.org/Default.htm

74 For more information on the scholarship program see: http://www.crihb.org/scholarship.htm

75 See: http://www.nsrhn.org/index.php?option=com_frontpage&Itemid=1

76 See: http://www.healthoccupations.org/rhorc/1/

77 See: http://www.siskiyous.edu/bond/ruralhealth/

78 See: http://www.siskiyous.edu/bond/distancelearning/

In summary, this report should serve to facilitate broad discussion of health care workforce development for those new to the field and an updated benchmark for those long familiar with workforce planning. As the community ages and the demand for allied health workers increases, there is an urgent need to conduct both short-term and long-term regional workforce planning. Clearly, more and improved data are needed to describe the health professions workforce and health professions student bodies at the regional level. This report provides a rich set of information that can serve as a basis to support the process of allied health workforce development in the Sacramento/Northern California Region.

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Appendix A.

Detailed Listing of Occupations Used in This Report by Standard Occupation Classification

SOC 21-1000: Community and 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
- Social and Human Service Assistants

SOC 29-1000: Health Diagnosing and 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 and 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 and Health Information Technicians
- Opticians, Dispensing

SOC 31-0000: Healthcare 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 B shows the racial/ethnic composition of each county using two measures. "Race Alone" means that each person is identified as a member of only that race group. Persons who identify with more than one race group are represented by the category Multirace. The designation "Race Alone or in Combination" means that each race category includes anyone who identifies as a member of that group, whether they identify with only that group or whether they identify with multiple groups, including that race group. In this scheme, there is no Multirace category. Latino is based on ethnic identity, not race. The category Latino includes people of all races who identify themselves as Latino. Therefore, the proportion of the population that is Latino does not change using the broader measure of race alone or in combination with other race groups.

Appendix B.
2005/2006 Population by Race/Ethnicity and by County: Sacramento/Northern California Region

Del Norte/Siskiyou/Modoc/Lassen Counties
(Estimated Population = 119,492)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	81.4	91.2
African American	0.8	1.2
Native American	3.0	7.0
Asian	1.4	2.0
Native Hawaiian/Pacific Islander	0.06	0.24
Multirace	3.8	–
Latino	9.6	–

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

Humboldt County

(Estimated Population = 131,575)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	80.0	88.4
African American	0.73	1.5
Native American	4.4	7.9
Asian	2.4	3.2
Native Hawaiian/Pacific Islander	Not available	Not available
Multirace	4.2	–
Latino	8.1	–

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

Shasta County

(Estimated Population = 179,259)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	84.3	91.2
African American	0.85	1.3
Native American	3.2	5.6
Asian	2.2	2.7
Native Hawaiian/Pacific Islander	0.17	0.17
Multirace	2.6	–
Latino	6.4	–

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

Mendocino/Lake Counties

(Estimated Population = 152,688)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	74.8	90.6
African American	1.3	1.7
Native American	3.1	5.3
Asian	1.2	1.4
Native Hawaiian/Pacific Islander	Not available	Not available
Multirace	2.0	–
Latino	17.4	–

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

Trinity/Tehama/Glenn/Colusa Counties

(Estimated Population = 124,508)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	66.4	78.3
African American	0.57	0.74
Native American	1.9	4.3
Asian	1.1	1.8
Native Hawaiian/Pacific Islander	0.12	0.3
Multirace	2.2	–
Latino	27.1	–

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

Butte County

(Estimated Population = 216,351)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	78.4	88.6
African American	1.4	2.3
Native American	1.0	3.6
Asian	3.5	4.8
Native Hawaiian/Pacific Islander	0.08	0.3
Multirace	3.7	–
Latino	11.9	–

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

Plumas/Sierra/Nevada Counties

(Estimated Population = 123,279)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	88.8	94.5
African American	0.01	0.3
Native American	1.1	2.9
Asian	0.85	1.7
Native Hawaiian/Pacific Islander	0.44	0.4
Multirace	1.8	–
Latino	6.6	–

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

Yuba/Sutter Counties

(Estimated Population = 160,591)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	60.1	74.3
African American	1.8	3.0
Native American	1.4	5.9
Asian	7.8	9.3
Native Hawaiian/Pacific Islander	0.13	0.6
Multirace	5.2	–
Latino	23.4	–

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

Yolo County

(Estimated Population = 191,280)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	54.8	72.3
African American	1.5	2.7
Native American	0.62	3.0
Asian	10.7	12.4
Native Hawaiian/Pacific Islander	0.26	0.26
Multirace	3.0	–
Latino	28.7	–

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

Sonoma County

(Estimated Population = 476,956)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	69.5	82.2
African American	1.5	2.1
Native American	0.71	2.1
Asian	3.9	5.1
Native Hawaiian/Pacific Islander	0.22	0.3
Multirace	2.4	–
Latino	21.6	–

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

Napa County
(Estimated Population = 133,493)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	61.2	81.8
African American	1.7	2.1
Native American	0.43	1.9
Asian	5.7	7.1
Native Hawaiian/Pacific Islander	0.03	0.4
Multirace	2.1	–
Latino	28.5	–

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

Solano County
(Estimated Population = 420,353)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	44.7	55.3
African American	14.3	16.0
Native American	0.54	2.0
Asian	14.2	16.6
Native Hawaiian/Pacific Islander	0.62	1.1
Multirace	3.3	–
Latino	21.8	–

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

Sacramento County
(Estimated Population = 1,387,257)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	52.9	63.9
African American	9.9	11.4
Native American	0.77	2.0
Asian	13.7	15.6
Native Hawaiian/Pacific Islander	0.7	1.0
Multirace	3.0	–
Latino	18.9	–

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

Placer County

(Estimated Population = 317,702)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	79.1	85.9
African American	1.2	1.9
Native American	0.69	2.0
Asian	5.4	6.1
Native Hawaiian/Pacific Islander	0.15	0.2
Multirace	2.3	–
Latino	11.0	–

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

El Dorado County

(Estimated Population = 175,729)

Race/Ethnicity	% of Population	
	Race Alone	Race Alone or in Combination
White	82.7	90.5
African American	0.7	0.9
Native American	0.58	2.4
Asian	4.1	4.9
Native Hawaiian/Pacific Islander	0.03	0.5
Multirace	2.2	–
Latino	9.5	–

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

Appendix C.

2005/2006 Median Age by Selected Asian Group: Sacramento/Northern California Region

Selected Asian Group	Median Age
Japanese	52
Chinese	38
Filipino	36
Korean	34
Vietnamese	32
Asian Indian	32
Laotian	24
Hmong	19

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

Appendix D contains tables presenting current and projected employment estimates for each selected occupation, for each county (or group of counties) in the Sacramento/ Northern California Region. Current employment estimates cover the following periods: 2008 wage estimates and 2007 employment and employment per population estimates. Projected employment estimates cover the period: 2004-2014.

Appendix D1.
Sonoma County: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	630	131	$45,698	21	1.70
Dental Hygienist	380	79	$117,957	6	1.40
Medical Assistant	870	180	$32,490	22	2.70
Pharmacy Technician	380	79	$29,494	9	2.30
Home Health Aide	850	176	$22,381	40	3.90
Nursing Aide	1300	270	$31,782	44	1.30
Licensed Vocational Nurse	800	166	$52,686	26	0.50
Physician Assistant	40	29	$73,653	3	3.30
Respiratory Therapist	120	25	$66,206	10	2.20
Radiologic Technologist	200	41	$62,525	10	1.80
Clinical Laboratory Scientist	170	35	$73,133	5	2.20
EMT/Paramedic*	–	–	$27,227/ $49,130	6	1.00
Psychiatric Technician	1100	228	$44,616	9	0
Mental Health Counselor	90	19	$36,982	8	1.40
Substance Abuse and Behavioral Disorder Counselor	240	50	$31,574	6	1.30
Mental Health and Substance Abuse Social Worker	1280	266	$29,786	33	1.10
Medical and Public Health Social Worker	100†	21†	$64,230	4	2.00
Community and Social Service Specialist: Health Educator	140	29	$32,490	2	1.40

† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D2.
Napa County: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	170	125	$35,838	7	2.00
Dental Hygienist	100	74	$107,078	4	2.50
Medical Assistant	–	–	$31,034	8	3.60
Pharmacy Technician	110	81	$35,734	3	2.90
Home Health Aide	180	133	$23,130	6	1.30
Nursing Aide	590	435	$29,328	9	1.60
Licensed Vocational Nurse	290	214	$43,098	6	0
Physician Assistant	–	–	$92,102	–	–
Respiratory Therapist	–	–	$68,824	2	2.50
Radiologic Technologist	–	–	$62,566	1	0
Clinical Laboratory Scientist	–	–	$70,450	2	3.30
EMT/Paramedic*	–	–	$25,272/ $32,677	–	1.40
Psychiatric Technician	–	–	$34,050	12	0.40
Mental Health Counselor	–	–	$35,859	3	1.40
Substance Abuse and Behavioral Disorder Counselor	–	–	$36,837	–	–
Mental Health and Substance Abuse Social Worker	–	–	$30,202	–	–
Medical and Public Health Social Worker	30	22	$66,227	6	1.90
Community and Social Service Specialist: Health Educator	40	30	$53,560	1	0

† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D3.
Solano County: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	530	125	$36,442	19	1.30
Dental Hygienist	250	59	$93,475	8	1.40
Medical Assistant	880	208	$41,018	31	3.00
Pharmacy Technician	270	64	$38,334	10	3.30
Home Health Aide	740	175	$17,826	27	5.00
Nursing Aide	1060	250	$25,792	38	3.30
Licensed Vocational Nurse	750	177	$48,776	23	2.10
Physician Assistant	40	9	$77,147	2	2.50
Respiratory Therapist	160†	38†	$61,173	10	5.00
Radiologic Technologist	200	47	$63,565	10	4.10
Clinical Laboratory Scientist	–	–	$72,946	9	3.60
EMT/Paramedic*	–	–	$22,693/ $34,861	4	1.80
Psychiatric Technician	–	–	$42,370	2	2.00
Mental Health Counselor	150	35	$43,826	19	2.10
Substance Abuse and Behavioral Disorder Counselor	110	26	$33,987	7	3.10
Mental Health and Substance Abuse Social Worker	230	54	$50,565	10	2.90
Medical and Public Health Social Worker	90	21	$63,731	5	2.50
Community and Social Service Specialist: Health Educator	140	33	$55,910	3	3.30

† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D4.
Sacramento MSA‡: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	2680	126	$36,130	120	2.20
Dental Hygienist	1280	60	$77,605	43	2.20
Medical Assistant	3400	160	$29,411	86	1.50
Pharmacy Technician	1400	66	$37,690	58	2.90
Home Health Aide	2990	141	$20,800	127	4.40
Nursing Aide	6080	287	$27,435	180	1.70
Licensed Vocational Nurse	2750	130	$49,899	91	1.30
Physician Assistant	410	19	$87,110	15	3.30
Respiratory Therapist	570	27	$63,440	31	3.10
Radiologic Technologist	850	40	$63,648	50	3.30
Clinical Laboratory Scientist	780†	37†	$72,010	45	3.20
EMT/Paramedic*	620	29	$21,944/ $35,339	19	2.10
Psychiatric Technician	—	—	$53,186	7	2.60
Mental Health Counselor	960	45	$50,170	66	3.40
Substance Abuse and Behavioral Disorder Counselor	270	13	$33,821	43	3.20
Mental Health and Substance Abuse Social Worker	760	36	$40,331	28	2.40
Medical and Public Health Social Worker	780	37	$58,011	25	2.10
Community and Social Service Specialist: Health Educator	840	40	$62,109	27	1.40

‡ Sacramento MSA represents Sacramento, El Dorado, Placer and Yolo counties
† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D5.
North Coast Economic Region‡: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	420	133	$28,662	12	0.60
Dental Hygienist	–	–	$41,787	–	–
Medical Assistant	730	232	$28,538	16	1.80
Pharmacy Technician	270	86	$35,485	7	2.00
Home Health Aide	600	190	$19,240	26	2.50
Nursing Aide	400	127	$21,570	9	0
Licensed Vocational Nurse	380	121	$43,514	9	0
Physician Assistant	90	29	$79,290	–	–
Respiratory Therapist	60	19	$57,242	–	–
Radiologic Technologist	100	32	$57,720	6	2.30
Clinical Laboratory Scientist	90†	29†	$76,336	–	–
EMT/Paramedic*	250	79	$21,133/ $43,014	16	1.00
Psychiatric Technician	–	–	$51,563	3	0.70
Mental Health Counselor	110†	35†	$37,190	4	0.80
Substance Abuse and Behavioral Disorder Counselor	90	29	$33,259	5	1.40
Mental Health and Substance Abuse Social Worker	–	–	$42,058	–	–
Medical and Public Health Social Worker	80	25	$50,648	–	–
Community and Social Service Specialist: Health Educator	100	32	$34,362	6	0.90

‡ North Coast Economic Region represents Del Norte, Humboldt, Lake and Mendocino counties
† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D6.
North Mountains Economic Region‡: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	190	83	$34,923	10	1.30
Dental Hygienist	210	91	$67,246	4	0.90
Medical Assistant	250	109	$29,702	9	2.40
Pharmacy Technician	160	70	$36,338	6	2.70
Home Health Aide	220	96	$20,592	11	4.20
Nursing Aide	440	192	$26,291	14	1.30
Licensed Vocational Nurse	330	144	$41,579	9	2.60
Physician Assistant	30	13	$80,184	2	2.00
Respiratory Therapist	60	26	$57,866	4	4.00
Radiologic Technologist	100	44	$59,821	4	2.50
Clinical Laboratory Scientist	50	22	$71,635	2	2.00
EMT/Paramedic*	–	–	$22,006/ $32,490	2	1.20
Psychiatric Technician	–	–	$44,699	–	–
Mental Health Counselor	30†	13†	$60,881	3	1.30
Substance Abuse and Behavioral Disorder Counselor	30†	13†	$32,053	–	–
Mental Health and Substance Abuse Social Worker	150	65	$38,355	2	1.40
Medical and Public Health Social Worker	–	–	$48,433	1	0
Community and Social Service Specialist: Health Educator	80	35	$38,147	2	1.70

‡ North Mountains Economic Region represents Lassen, Modoc, Nevada, Plumas, Sierra, Siskiyou and Trinity counties
† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D7.
North Valley Economic Region‡: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	90	80	$29,952	2	2.00
Dental Hygienist	70	62	$92,352	1	3.30
Medical Assistant	100	88	$26,998	2	2.00
Pharmacy Technician	70	62	$32,718	3	2.50
Home Health Aide	180†	164†	$18,658	10	4.40
Nursing Aide	210†	192†	$25,522	4	0.50
Licensed Vocational Nurse	–	–	$44,948	2	0
Physician Assistant	30	27	$80,870	–	–
Respiratory Therapist	40†	36†	$57,075	2	3.30
Radiologic Technologist	–	–	$68,058	–	–
Clinical Laboratory Scientist	–	–	$68,494	–	–
EMT/Paramedic*	–	–	$26,790/ $31,554	–	1.30
Psychiatric Technician	–	–	–	–	–
Mental Health Counselor	–	–	–	–	–
Substance Abuse and Behavioral Disorder Counselor	–	–	$41,080	–	–
Mental Health and Substance Abuse Social Worker	–	–	$44,158	–	–
Medical and Public Health Social Worker	30	27	$70,054	–	–
Community and Social Service Specialist: Health Educator	–	–	$47,528	–	–

‡ North Valley Economic Region represents Colusa, Glenn and Tehama counties
† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D8.
Shasta County: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	220	121	$29,390	9	2.10
Dental Hygienist	110	61	$78,042	4	1.90
Medical Assistant	460	254	$29,120	20	2.30
Pharmacy Technician	190	105	$37,003	7	1.80
Home Health Aide	520	287	$18,824	17	2.50
Nursing Aide	470	259	$27,144	29	2.20
Licensed Vocational Nurse	250	138	$41,850	20	2.30
Physician Assistant	60	33	$92,498	2	2.00
Respiratory Therapist	50	28	$51,605	–	–
Radiologic Technologist	140	77	$55,390	–	–
Clinical Laboratory Scientist	30	17	$76,107	–	–
EMT/Paramedic*	–	–	$18,512/ $42,432	2	1.60
Psychiatric Technician	–	–	$32,282	–	–
Mental Health Counselor	–	–	$58,822	7	1.70
Substance Abuse and Behavioral Disorder Counselor	–	–	$48,776	–	–
Mental Health and Substance Abuse Social Worker	130	72	$38,320	4	2.00
Medical and Public Health Social Worker	60	33	$43,950	4	2.00
Community and Social Service Specialist: Health Educator	–	–	$57,242	–	–

† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D9.
Butte County: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	330	151	$28,787	10	2.60
Dental Hygienist	–	–	$67,330	2	1.40
Medical Assistant	610	278	$27,664	31	3.20
Pharmacy Technician	220	100	$35,963	5	1.70
Home Health Aide	850	388	$19,178	45	4.40
Nursing Aide	1110	507	$21,632	29	1.30
Licensed Vocational Nurse	–	–	$42,910	18	0.60
Physician Assistant	80	37	$79,664	2	2.50
Respiratory Therapist	90	41	$56,659	7	2.50
Radiologic Technologist	130	59	$53,976	6	1.90
Clinical Laboratory Scientist	80	37	$75,858	4	1.00
EMT/Paramedic*	110	50	$30,181/ $41,683	–	1.20
Psychiatric Technician	–	–	$47,611	–	–
Mental Health Counselor	–	–	$44,304	5	1.50
Substance Abuse and Behavioral Disorder Counselor	60†	28†	$49,858	3	3.30
Mental Health and Substance Abuse Social Worker	–	–	$34,195	1	0
Medical and Public Health Social Worker	40	18	$40,102	3	0.90
Community and Social Service Specialist: Health Educator	60	27	$34,674	–	–

† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D10.
Yuba MSA‡: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	220	132	$32,906	9	1.40
Dental Hygienist	70	42	$88,504	0	0
Medical Assistant	310	185	$27,248	10	1.30
Pharmacy Technician	90	54	$38,251	3	3.30
Home Health Aide	–	–	$19,178	6	5.00
Nursing Aide	370	221	$24,731	9	1.50
Licensed Vocational Nurse	240	144	$42,869	–	–
Physician Assistant	40	24	$49,920	3	4.00
Respiratory Therapist	–	–	$57,158	–	–
Radiologic Technologist	70†	43†	$55,078	–	–
Clinical Laboratory Scientist	–	–	$73,133	–	–
EMT/Paramedic*	–	–	$22,630/ $34,050	–	1.30
Psychiatric Technician	–	–	$45,885	1	0
Mental Health Counselor	–	–	$31,700	2	2.00
Substance Abuse and Behavioral Disorder Counselor	30†	18†	–	2	2.00
Mental Health and Substance Abuse Social Worker	40	24	$31,179	1	0
Medical and Public Health Social Worker	40†	25†	$57,158	2	2.50
Community and Social Service Specialist: Health Educator	40†	25†	$28,330	1	0

‡ Yuba MSA represents Yuba and Sutter counties
† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix D11.
Eastern Sierra Economic Region‡: Current Employment Estimates and 2004-2014 Projected Employment Estimates by Occupation

Occupation	Estimated Employment	Estimated Employment per 100,000 Population	Median Annual Wage	Avg. # of Job Openings Per Year	Annual Growth Rate (%)
Dental Assistant	–	–	$34,674	–	–
Dental Hygienist	–	–	$122,824	–	–
Medical Assistant	50†	149†	$24,419	2	1.40
Pharmacy Technician	–	–	$35,027	1	1.00
Home Health Aide	–	–	$19,094	–	–
Nursing Aide	110	328	$23,442	5	3.60
Licensed Vocational Nurse	90	268	$43,742	1	0
Physician Assistant	–	–	$122,845	–	–
Respiratory Therapist	–	–	$63,523	1	0
Radiologic Technologist	–	–	$71,739	0	0
Clinical Laboratory Scientist	–	–	$77,854	0	0
EMT/Paramedic*	–	–	$27,934/ $45,240	1	1.60
Psychiatric Technician	–	–	–	–	–
Mental Health Counselor	–	–	$59,673	1	10
Substance Abuse and Behavioral Disorder Counselor	–	–	$53,269	0	0
Mental Health and Substance Abuse Social Worker	30	89	$37,461	0	0
Medical and Public Health Social Worker	–	–	$68,723	0	0
Community and Social Service Specialist: Health Educator	–	–	$50,315	1	0

‡ Eastern Sierra Economic Region represents Alpine, Inyo and Mono counties
† 2006 Estimated Employment/Employment per Population
** 25th/75th percentile wage estimates*
Source: California Employment Development Department, Labor Market Information Division

Appendix E lists all of the education institutions in each county that we identified as offering one of the selected allied health education programs, including those that did not report any student data. It is not meant to be an exhaustive catalog of all available training opportunities in the region, there may be other institutions we were not able to identify. As noted, these appendices include both schools that reported graduates, and non-reporting schools that we were able to identify through other sources. Sometimes schools mistakenly report graduates of programs they don't actually offer. We've made efforts to verify that schools reporting graduates of one of the selected allied health education programs actually hosts that program.

Appendix E1.
Sonoma County: Program and Institution Listing

Program and Institution	City	Zip
Dental Assistant		
Santa Rosa Junior College	Santa Rosa	95401
Dental Hygiene		
Santa Rosa Junior College	Santa Rosa	95401
Medical Assistant		
Empire College School of Business	Santa Rosa	95403
Santa Rosa Junior College	Santa Rosa	95401
Pharmacy Technician		
Santa Rosa Junior College	Santa Rosa	95401
Home Health Aide		
A.R.C./Sonoma County Chapter	Santa Rosa	95403
Petaluma Adult School	Petaluma	94952
Santa Rosa Jr. College	Santa Rosa	95401
Nursing Assistant/Aide		
A.R.C./Sonoma County Chapter	Santa Rosa	95403
American Red Cross	Santa Rosa	95403
Cloverdale Healthcare Center	Cloverdale	95425
Petaluma Adult School	Petaluma	94952
Santa Rosa Junior College	Santa Rosa	95401
Sebastapol Convalescent Hospital	Sebastopol	95472
Sonoma Redevelopment Center	Eldridge	95431
Sonoma Training Center	Sonoma	95476
Summerfield Skilled Nursing and Rehab Center	Santa Rosa	95405
The Oaks Convalescent	Petaluma	94952

Appendix E1. (continued)
Sonoma County: Program and Institution Listing

Program and Institution	City	Zip
Licensed Vocational Nursing		
Santa Rosa Junior College	Santa Rosa	95401
Nurse Practitioner		
Sonoma State University	Rohnert Park	94928
Radiologic Technologist		
Santa Rosa Junior College	Santa Rosa	95401
EMT/Paramedic		
Santa Rosa Junior College	Santa Rosa	95401
Psychiatric Technician		
Santa Rosa Junior College	Santa Rosa	95401
Substance Abuse/Addiction Counseling (Associate's degree)		
Santa Rosa Junior College	Santa Rosa	95401
Clinical/Counseling Psychology		
Sonoma State University	Rohnert Park	94928
Gerontology		
Santa Rosa Junior College	Santa Rosa	95401

Appendix E2.
Napa County: Program and Institution Listing

Program and Institution	City	Zip
Nursing Assistant/Aide		
Napa County R.O.P.	Napa	94559
Sierra Vista Care Center	Napa	94558
Sunbridge Care and Rehab For Calistoga	Calistoga	94515
Licensed Vocational Nursing		
Napa Valley College	Napa	94558
Respiratory Therapy		
Napa Valley College	Napa	94558
EMT/Paramedic		
Napa Valley College	Napa	94558
Psychiatric Technician		
Napa Valley College	Napa	94558

Appendix E3.
Solano County: Program and Institution Listing

Program and Institution	City	Zip
Medical Assistant		
CSI Career College	Vacaville	95687
Trinity College	Fairfield	94533
Pharmacy Technician		
CSI Career College	Vacaville	95687
Trinity College	Fairfield	94533
Home Health Aide		
Fairfield Adult School	Fairfield	94533
Prime Career College	Vallejo	94591
Solano School Of Nursing Assistants	Vallejo	94591
Vallejo Adult School (multiple sites)	Vallejo	94590
Nursing Assistant/Aide		
Fairfield Nursing and Rehab Center	Fairfield	94533
Fairfield Susisun Adult School	Fairfield	94533
Greenfield Care Center Of Fairfield	Fairfield	95433
La Mariposa Care and Rehab Center	Fairfield	94533
Prime Career College	Vallejo	94591
Solano School Of Nursing Assistants	Vallejo	94590
Vacaville Convalescent and Rehab Center	Vacaville	95687
Vallejo Adult School (multiple sites)	Vallejo	94590
Vallejo Nursing School	Vallejo	94590
Licensed Vocational Nursing		
CSI Career College	Vacaville	95687
Prime Career College	Vallejo	94590
Vacaville Adult School	Vacaville	95688
EMT/Paramedic		
Solano Community College	Fairfield	94534

Appendix E4.
Sacramento County: Program and Institution Listing

Program and Institution	City	Zip
Dental Assistant		
High-Tech Institute-Sacramento	Sacramento	95827
KAPLAN College	Sacramento	95821
Sacramento City College	Sacramento	95822
San Joaquin Valley College-Rancho Cordova	Rancho Cordova	95670
Western Career College-Citrus Heights	Citrus Heights	95621
Western Career College-Sacramento	Sacramento	95826
Dental Hygiene		
Sacramento City College	Sacramento	95822
Western Career College-Sacramento	Sacramento	95826
Medical Assistant		
CET-Sacramento	Sacramento	95828
Cosumnes River College	Sacramento	95823
Heald College-Rancho Cordova	Rancho Cordova	95670
Heald College-Sacramento	Rancho Cordova	95670
High-Tech Institute-Sacramento	Sacramento	95827
Maric College-Sacramento Campus	Sacramento	95821
MTI College	Sacramento	95841
National Career Education	Citrus Heights	95610
San Joaquin Valley College-Rancho Cordova	Rancho Cordova	95670
Western Career College-Sacramento	Sacramento	95826
Pharmacy Technician		
High-Tech Institute-Sacramento	Sacramento	95827
San Joaquin Valley College-Rancho Cordova	Rancho Cordova	95670
TechSkills of Sacramento	Sacramento	95815
Western Career College-Citrus Heights	Citrus Heights	95621
Western Career College-Sacramento	Sacramento	95826
Home Health Aide		
American River College	Sacramento	95841
Charles A. Jones Skills and Bus. Ed. Center	Sacramento	95842
Good Shepherd Training Program	Carmichael	95608
Grant Joint Union High School District — Adult/Community/Vocational Education	North Highlands	95660
Sacramento County R.O.P. (multiple sites)	Sacramento	95827

Appendix E4. (continued)
Sacramento County: Program and Institution Listing

Program and Institution	City	Zip
Nursing Assistant/Aide		
American River College	Sacramento	95841
CAJ Skills And Business Center	Sacramento	95482
Grant Joint Union High School District — Adult/Community/Vocational Education	North Highlands	95660
Prime Hlth Career Center Of Sacramento	Sacramento	95834
Sacramento County R.O.P. (multiple sites)	Mather Air Force Base	95655
Winterstein Adult Center	Sacramento	95864
Licensed Vocational Nursing		
Grant Adult and Comm. Education	McClellan Park	95652
Sacramento City College	Sacramento	95822
Unitek College - Sacramento	Sacramento	95825
Western Career College - Sacramento	Sacramento	95826
Nurse Practitioner		
California State University-Sacramento	Sacramento	95819
Respiratory Therapy		
American River College	Sacramento	95841
EMT/Paramedic		
American River College	Sacramento	95841
Cosumnes River College	Sacramento	95823
Clinical Laboratory Scientist (Histocompatibility)		
Blood Source	Sacramento	95816
Clinical Laboratory Scientist (Immunohematologist)		
Blood Source	Sacramento	95816
Substance Abuse/Addiction Counseling (Associate's degree)		
American River College	Sacramento	95841
Clinical/Counseling Psychology		
California State University-Sacramento	Sacramento	95819
Gerontology		
American River College	Sacramento	95841
California State University-Sacramento	Sacramento	95819
Folsom Lake College	Folsom	95630
Sacramento City College	Sacramento	95822
Social Work (MSW)		
California State University-Sacramento	Sacramento	95819

Appendix E5.
El Dorado County: Program and Institution Listing

Program and Institution	City	Zip
Medical Assistant		
Lake Tahoe Community College	South Lake Tahoe	96150
Home Health Aide		
Lake Tahoe Community College	S. Lake Tahoe	96150
Nursing Assistant/Aide		
Gold Country Health Center	Placerville	95667
Lake Tahoe Community College	Lake Tahoe	96150
Placerville Pines	Placerville	95667
EMT/Paramedic		
Lake Tahoe Community College	South Lake Tahoe	96150
Substance Abuse/Addiction Counseling (Associate's degree)		
Lake Tahoe Community College	South Lake Tahoe	96150

Appendix E6.
Placer County: Program and Institution Listing

Program and Institution	City	Zip
Medical Assistant		
Heald College-Roseville	Roseville	95678
Home Health Aide		
Forty-Niner R.O.P.	Auburn	95603
Sierra College	Rocklin	95677
Sutter Visiting Nurses Association-Auburn	Auburn	95602
Nursing Assistant/Aide		
Auburn Gardens Convalescent	Auburn	95603
Colonial Healthcare	Auburn	95603
Foothill Oaks Care Center	Auburn	95603
Forty-Niner R.O.P.	Auburn	95603
Health Care Mgmt Training Center - Auburn	Auburn	95603
J and J Care Center	Penryn	95663
Lincoln Manor Care Center	Lincoln	95648
Oak Ridge Healthcare Center	Roseville	95661
Roseville Care Center	Roseville	95661
Siena Care Center	Auburn	95603
Sierra Community College	Rocklin	95677
Sunrise Healthcare Center	Roseville	95661
Licensed Vocational Nursing		
Sierra Community College	Rocklin	95677
EMT/Paramedic		
Sierra Community College	Rocklin	95677

Appendix E7.
Yolo County: Program and Institution Listing

Program and Institution	City	Zip
Nursing Assistant/Aide		
Alderson Convalescent	Woodland	95695
Cottonwood Health Care Center	Woodland	95695
Courtyard Health Care	Davis	95616
Sierra Health Care Convalescent Hosp	Davis	95616
Somerset Nursing Center	Sacramento	95691
Woodland SNF	Woodland	95695
Yolo County R.O.P./ Davis High School	Woodland	95776
Nurse Practitioner		
University of California-Davis	Davis	95616
Physician Assistant		
University of California-Davis	Davis	95616
Clinical Laboratory Scientist (Generalist)		
University of California-Davis	Davis	95616
Public Health (MPH)		
University of California-Davis	Davis	95616

Appendix E8.
Del Norte County: Program and Institution Listing

Program and Institution	City	Zip
Nursing Assistant/Aide		
College of the Redwoods	Del Norte	95531
Crescent City Convalescent	Crescent City	95531
Licensed Vocational Nursing		
College of the Redwoods	Del Norte	95531

Appendix E9.
Humboldt County: Program and Institution Listing

Program and Institution	City	Zip
Dental Assistant		
College of the Redwoods	Eureka	95501
Medical Assistant		
College of the Redwoods	Eureka	95501
Home Health Aide		
College Of The Redwoods	Eureka	95501
Nursing Assistant/Aide		
College Of The Redwoods	Eureka	95501
Eureka Healthcare and Rehab Center	Eureka	95501
Granada Healthcare and Rehab Center	Eureka	95501
Humboldt R.O.P.	Eureka	95501
Pacific Healthcare and Rehab Center	Eureka	95501
St. Luke Healthcare and Rehab Center	Fortuna	95540
Licensed Vocational Nursing		
College of the Redwoods	Eureka	95501
Substance Abuse/Addiction Counseling (Associate's degree)		
College of the Redwoods	Eureka	95501
Clinical/Counseling Psychology		
Humboldt State University	Arcata	95521
Social Work (MSW)		
Humboldt State University	Arcata	95521

Appendix E10.
Lake County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
Lake Co. Office Of Education/R.O.P.	Lakeport	95453
Nursing Assistant/Aide		
Evergreen Lakeport Healthcare Center	Lakeport	95453
Lake County Office Of Education	Lakeport	95453
Lake County R.O.P./Meadowood	Lakeport	95453
Lakeport Skilled Nursing Center	Lakeport	95453
Meadowood Nursing Center	Clearlake	95422

Appendix E11.
Mendocino County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
Mendocino College	Ukiah	95482
Mendocino County R.O.P. - Fort Bragg	Fort Bragg	95437
Nursing Assistant/Aide		
Mendocino County R.O.P. - Fort Bragg	Fort Bragg	95437
Mendocino County R.O.P. - Ukiah	Ukiah	95482
Northbrook Nursing and Rehab	Willits	95490
Sherwood Oaks Health	Fort Bragg	95437
Ukiah Convalescent Hospital	Ukiah	95482
Valley View SNF	Ukiah	95482
Licensed Vocational Nursing		
Ukiah Adult School	Ukiah	95482
EMT/Paramedic		
Mendocino College	Ukiah	95482
Substance Abuse/Addiction Counseling (Associate's degree)		
Mendocino College	Ukiah	95482

Appendix E12.
Lassen County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
Banner Lassen Home Care	Susanville	96130
Nursing Assistant/Aide		
Health Care Management-Susanville	Susanville	96130
Susanville Nursing And Rehab Center	Susanville	96130
Licensed Vocational Nursing		
Lassen Community College	Susanville	96130
Substance Abuse/Addiction Counseling (Associate's degree)		
Lassen Community College	Susanville	96130

Appendix E13.
Modoc County: Program and Institution Listing

Program and Institution	City	Zip
Nursing Assistant/Aide		
Modoc Medical Center	Alturas	96101
Surprise Valley Hospital	Cedarville	96104

Appendix E14.
Nevada County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
Nevada Union Adult Education	Grass Valley	95945
School Of The Heart	Nevada City	95959
School Of The Heart	Nevada City	95959
Tahoe Forest Hospital	Truckee	96160
Nursing Assistant/Aide		
Golden Empire Convalescent	Grass Valley	95945
Grass Valley Care Center	Grass Valley	95945
Meadow View Manor	Grass Valley	95945

Appendix E15.
Plumas County: Program and Institution Listing

Program and Institution	City	Zip
Nursing Assistant/Aide		
Eastern Plumas District Hospital	Portola	96122
Feather River Community College - Quincy	Quincy	95971
Health Care Management - Quincy	Quincy	95971
Plumas/Sierra Nursing And Rehab Center	Quincy	95971
Plumas/Sierra R.O.P.	Quincy	95971
Plumas/Sierra R.O.P.	Greenville	96161
Plumas/Sierra R.O.P.	Portola	96112
Plumas/Sierra R.O.P	Chester	96020
Licensed Vocational Nursing		
Feather River Community College - Quincy	Quincy	95971

Appendix E16.
Sierra County: Program and Institution Listing

Program and Institution	City	Zip
No Programs Listed		

Appendix E17.
Siskiyou County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
College Of The Siskiyous	Weed	96094
Siskiyou Home Health Services	Yreka	96097
West Home Health Care Agency	Dorris	96023
Nursing Assistant/Aide		
College Of The Siskiyous	Weed	96094
Sunbridge Care and Rehab For Weed	Weed	96094
Licensed Vocational Nursing		
College of the Siskiyous	Weed	96094
EMT/Paramedic		
College of the Siskiyous	Weed	96094
Substance Abuse/Addiction Counseling (Associate's degree)		
College of the Siskiyous	Weed	96094
Gerontology		
College of the Siskiyous	Weed	96094

Appendix E18.
Trinity County: Program and Institution Listing

Program and Institution	City	Zip
No Programs Listed		

Appendix E19.
Colusa County: Program and Institution Listing

Program and Institution	City	Zip
No Programs Listed		

Appendix E20.
Glenn County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
Glenn County Adult Ed. Program	Willows	95988
Nursing Assistant/Aide		
Glenn County R.O.P.	Willows	95988
Sunbridge Care Center For Willows	Willows	95988

Appendix E21.
Tehama County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
Red Bluff High School Tehama Co. R.O.P	Red Bluff	96080
Nursing Assistant/Aide		
Red Bluff Union High School District	Red Bluff	96080
Sunbridge Of Red Bluff	Red Bluff	96080

Appendix E22.
Shasta County: Program and Institution Listing

Program and Institution	City	Zip
Dental Assistant		
Shasta/Trinity R.O.P.	Redding	96001
Dental Hygiene		
Shasta College	Redding	96003
Medical Assistant		
Lake College	Redding	96002
Home Health Aide		
Medical Home Care Professionals, Inc.	Redding	96002
Shasta Tehama Trinity College	Redding	96003
Shasta/Trinity R.O.P. (multiple sites)	Redding	96001
Nursing Assistant/Aide		
Beverly Manor Convalescent	Redding	96001
Canyonwood Nursing and Rehab Center	Redding	96003
Mayers Memorial Hospital	Fall River Mills	96028
Redding Care Center	Redding	96001
Shasta - Tehama - Trinity Community College District	Redding	96049
Shasta Convalescent Hospital	Redding	96002
Shasta/Trinity R.O.P. (multiple sites)	Redding	96001
Licensed Vocational Nursing		
Feather River Community College - Fall River Mills	Fall River Mills	96028
Lake College	Redding	96002
Shasta Community College	Redding	96003

Appendix E23.
Butte County: Program and Institution Listing

Program and Institution	City	Zip
Dental Assistant		
Butte County R.O.P.	Chico	95928
Home Health Aide		
Butte College	Oroville	95965
Butte County R.O.P.	Chico	95928
Home Health Care Management, Inc.	Chico	95973
Nursing Assistant/Aide		
Butte County R.O.P.	Chico	95928
Butte College	Oroville	95965
Chico Care Center	Chico	95926
Chico Creek Care and Rehab Center	Chico	95926
Cypress Acres Conv. Hosp.	Paradise	95969
Evergreen Gridley Health Care Center	Gridley	95948
Olive Ridge Care Center	Oroville	95966
Oroville Adult School	Oroville	95966
Riverside Convalescent Hosp.	Chico	95926
Sunbridge Care Center For Paradise	Paradise	95969
The Health Center Sierra Sunrise Village	Chico	95928
Licensed Vocational Nursing		
Butte College	Oroville	95965
Nurse Practitioner		
California State University-Chico	Chico	95929
Respiratory Therapy		
Butte College	Oroville	95965
EMT/Paramedic		
Butte College	Oroville	95965
Substance Abuse/Addiction Counseling (Associate's degree)		
Butte College	Oroville	95965
Clinical/Counseling Psychology		
California State University-Chico	Chico	95929
Social Work (MSW)		
California State University-Chico	Chico	95929

Appendix E24.
Yuba County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
Marysville Care and Rehab Center	Marysville	95901
Nursing Assistant/Aide		
Tri-County R.O.P.	Marysville	95901
Licensed Vocational Nursing		
Yuba College	Marysville	95901
Radiologic Technologist		
Yuba College	Marysville	95901
EMT/Paramedic		
Yuba College	Marysville	95901
Psychiatric Technician		
Yuba College	Marysville	95901
Substance Abuse/Addiction Counseling (Associate's degree)		
Yuba College	Marysville	95901

Appendix E25.
Sutter County: Program and Institution Listing

Program and Institution	City	Zip
Home Health Aide		
Tri-County R.O.P.	Yuba City	95991
Nursing Assistant/Aide		
Emmanuel Health Care Center	Yuba City	95991
Live Oak Care Center	Live Oak	95953
Tri-County R.O.P. (multiple sites)	Yuba City	95991
Yuba City Care Center	Yuba City	95991
Licensed Vocational Nursing		
Tri-County R.O.P.	Yuba City	95991

Appendix E26.
Alpine County: Program and Institution Listing

Program and Institution	City	Zip
No Programs Listed		

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