



CENTER
FOR THE HEALTH PROFESSIONS

REGISTERED DENTAL HYGIENISTS IN CALIFORNIA
REGIONAL LABOR MARKET CHART BOOK
(2005-2006)

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HEALTH WORKFORCE TRACKING COLLABORATIVE
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INTRODUCTION

Registered dental hygienists (RDHs) focus on providing preventive and therapeutic dental hygiene services designed to reduce the incidence and severity of periodontal disease and caries (cavities) for the population of California. The labor market for dental hygienists is responsive to variations in multiple factors at the local level. This study explores the labor market for the California dental hygiene workforce at a regional level, providing policy makers, professionals and educators an unprecedented look at local labor market dynamics which contribute to the provision of preventive dental care.

Much is known about the dentist workforce and about the utilization of dental care at a national level, but few studies have focused on the supply of and demand for dental hygienists at the regional level. Prior studies have identified that California dentists perceived a shortage of RDHs. Statewide economic trends in wages substantiate the possibility of earlier shortages of assistants and hygienists, but also show this easing somewhat since 2000.^{1,2,3} Our data support the conclusion that the labor market is trending toward an increased supply of dental hygienists statewide, however the regional analyses provided here show the variation in current and projected supply at a local level which has been previously unavailable.

Key findings from this chart book are:

- Regional analyses show a wide range in baseline supply of RDHs (20.2 to 47.9 per 100,000 population) as well as growth (from -0.4% to 33.6% between 2002-2005) indicating the uneven nature of the supply and growth around the state.
- There is wide variability by region in baseline supply (dentists and hygienists in relation to the population), relational supply (the number of hygienists per dentist), supply projections (new graduates and retirements or other labor market exits), and perceptions of supply (RDH vacancies and difficulty finding work). Within most regions contradictory indicators exist, indicating that one single indicator is insufficient to understand the full nature of the local labor market.
- The labor market for RDHs contracted statewide between 2000 and 2005. However, the barriers to finding employment encountered by RDHs and the level of contraction varied by region. The San Joaquin Valley, Greater Sacramento, Northern Sacramento Valley, Central Sierra, Central Coast and Inland Empire experienced more severe contractions than the other regions. The five regions reported greater than average proportions of RDHs having *some* to *extreme* difficulty finding employment in 2005.
- There was variation by region in the barriers to RDH employment. The most common difficulty cited was the inability to find a satisfactory work environment, closely followed by extended travel time (more common in rural regions) and the need for one specific day and not being able to find it (more common in urban regions).
- The increase in both the number of dental hygiene educational programs (23 currently) and graduates in recent years (523 in 2007) has led to a decrease in the percent of younger hygienists educated out of state. Still, about one sixth of hygienists under the age of 34 report being educated out of state. The Bay Area, Southern Border, Northern California East and West and the Northern Sacramento Valley continue to report a higher than average percent of out-of-state educated RDHs under the age of 34.
- Projecting from 2005 to 2010, there will be a net gain of 293 RDHs. Estimates suggest 2605 new graduates will enter the field, whereas survey data reporting intention to retire suggest 2312 RDHs will exit the profession during that period. Projecting out ten years to 2015, if the numbers remain generally stable and all graduates remain in the state, California will face a net loss of 537 RDHs statewide due to the exits of 5747 RDHs and the entrance of 5210 graduates. Continued in-migration at current levels would add another 16% annually (about 860 additional RDHs over 10

¹ Brown TT, Finlayson TL, Scheffler RM. How do we measure shortages of dental hygienists and dental assistants? Evidence from California: 1997-2005. *J Am Dent Assoc.* Jan 2007;138(1):94-100.

² Pourat N, Brown TT. *Is there a Shortage of Dental Hygienists and Assistants in California?* Sacramento: CDA Foundation; November 2005.

³ Pourat N, Roby D, Wyn R, Marcus M. *Findings from the 2003 California Dental Survey.* Los Angeles: UCLA Center for Health Policy Research; November 2005.

years) changing the overall projection to a net gain of just over 300 RDHs statewide by 2015. The lack of consistent data on the practice status and geographic distribution of dentists, combined with the lack of any projected data on dentist's employment patterns of RDHs, renders it impossible to say whether these projections indicate "too many", "not enough", or "just the right number" of RDHs for the future.

Conclusions and Recommendations

- Discussions with leaders and educators in the various regions confirmed that the trend toward increased difficulty in finding full RDH employment continued from 2005 to 2008. Many younger graduates report difficulty when first entering the labor market, particularly with locating listings, receiving job interviews, and finding employment for a sufficient number of days per week.
- The primary issue which confounds the understanding of the levels of supply and demand for RDHs is the uneven utilization of dental hygienists by dentists. About half of dentists do not employ RDHs, others employ multiple RDHs, and some only employ part time RDHs.⁴ This creates a situation whereby a single vacancy does not represent a full time equivalent RDH. As well, many RDHs do not want to work more than a few days a week. Therefore, regions with high supply of RDHs may also have high number of vacant part time positions, due to the mismatch between what each provider is looking for in the employment/employee relationship.
- The mismatch between supply and demand of RDHs creates a large latent supply of RDH labor in the state. This is shown resoundingly in the number of RDHs statewide who report a difficulty in finding one more day of work, one specific day of work, or part time work. It is likely that there is widespread under-employment of RDHs, although again this varies by region of the state.
- New avenues for employment of RDHs in non-traditional settings are opening up in community health centers, public health settings and other community based locations as policy makers attempt to deal with problems in access to care and health disparities. New laws allowing for alternative practice and unsupervised public health practice allow for a decoupling of RDHs from the primary employment option of a dental office. Non-traditional employers and the public may benefit from the under-employment of RDHs if viable alternatives to accessing dental hygiene care are created. Nonetheless, the non-traditional jobs provide a small proportion of overall RDH employment to date.
- The contraction in the RDH labor market occurred in conjunction with a number of new education programs and the economic downturn of the early 2000's. It is difficult to project what the future holds for the dental hygiene labor market as the US economy falters, reducing the disposable income available to pay for dental procedures, half of which are paid out of pocket. If business slows for dental practices, dentists may lay off RDHs and provide hygiene services themselves. Yet, educational programs continue to grow, with several new RDH programs under development, as well as a new dental school opening in 2009.

This report is organized as a series of labor market regional summaries, following a California statewide summary. The eleven regions used were adapted from the nine California Economic Strategy Panel Regions.⁵ Each regional summary has three parts.

- First there is a section on **demand for dental hygienists** which looks at population, provider and employment trends.
- Second is a section on the **supply of dental hygienists**, including inflow from local educational supply and migration and outflow from migration and labor market exits.
- Finally each region has a section describing the **state of the labor market** in that region, including demographics of the workforce, wages, benefits, and practice characteristics.

The data used in this report come from a number of sources, primarily the 2005-2006 Statewide Sample Survey of Registered Dental Hygienists in California. The data are explained in detail in the Methodology section at the end of the report.

⁴ Pourat N, Roby D, Wyn R, Marcus M. *Findings from the 2003 California Dental Survey*. Los Angeles: UCLA Center for Health Policy Research; November 2005.

⁵ <http://www.labor.ca.gov/panel/espcrep.htm>

California Economic Regions



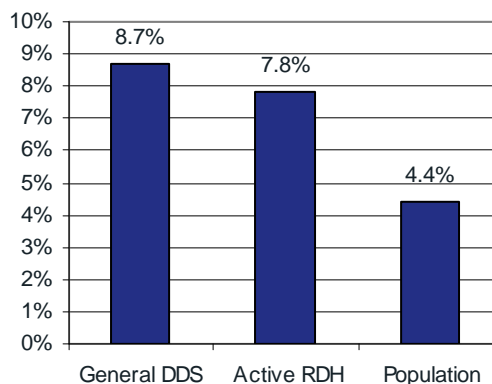
CALIFORNIA

Demand for Dental Hygienists in California

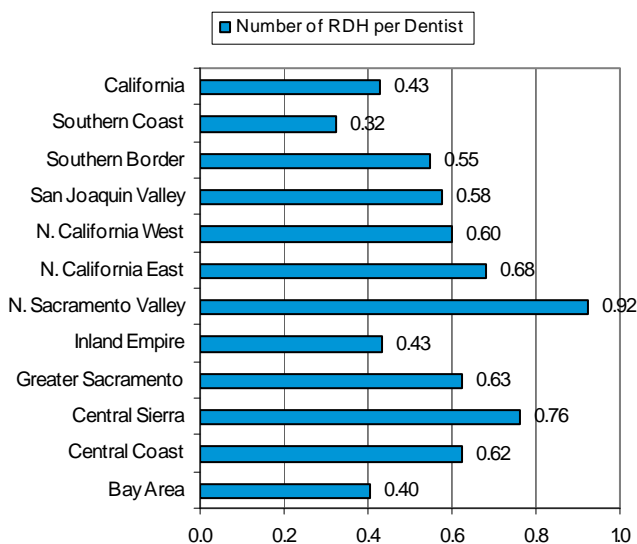
The demand for registered dental hygienists (RDHs) in California is driven by dental offices response to the demand for dental care by the population, which will continue to grow and change over the next few decades. California's population is projected to grow from 34 million in 2000 to over 54 million people by 2040. There is a bifurcated age distribution in the state, with projected growth in both the over 65 population as well as the under 18 population. California has no racial/ethnic majority, and the population will continue to increase in racial and ethnic diversity. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists.

In 2005, the statewide supply of dentists was growing faster than the supply of RDHs, and was outpacing population growth. As a result, the ratio of RDH to dentists dropped to 0.43 in 2005, from a reported 0.47 in 2002.⁶ The ratio of dentists to population in California (70.0/100,000) is significantly higher than the national average (59.0/100,000),⁷ while the ratio of RDHs to population in California (29.8/100,000) is less than the national average (51.0/100,000). However, the supply and growth of practitioners varies widely across regions of the state, reflected by a wide variability of dentist to population ratios as well as dentist to RDH ratios.

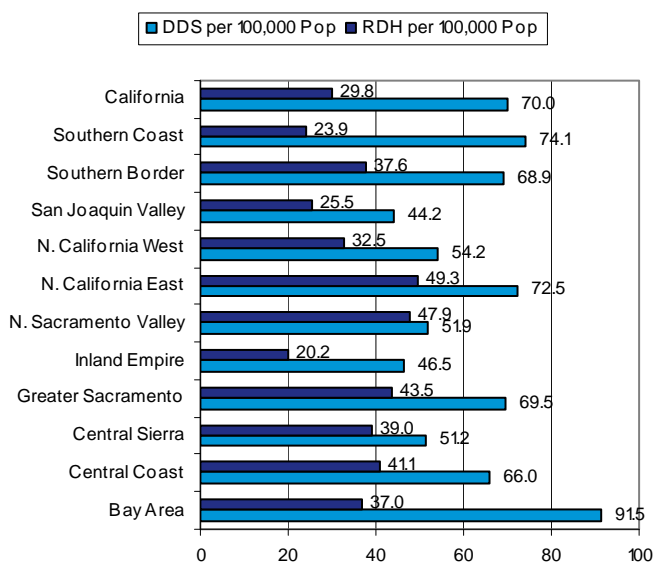
Growth of General DDS, Active RDH and Total Population in California (2002-2005)



Active RDH per General DDS (2005-2006)



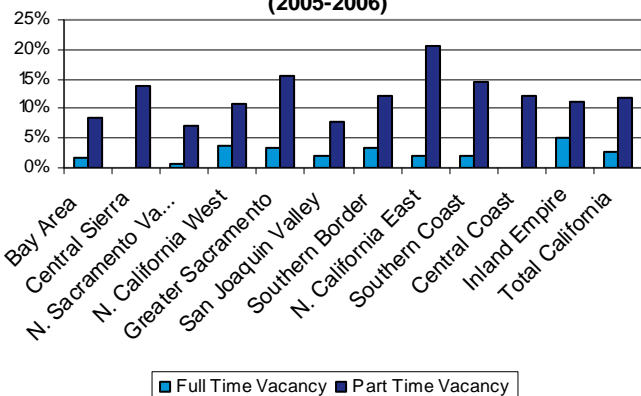
General DDS and Active RDH per Population (2005-2006)



⁶ Pourat N, Roby D, Wyn R, Marcus M. *Findings from the 2003 California Dental Survey*. Los Angeles: UCLA Center for Health Policy Research; November 2005.

⁷ American Dental Education Association. Trends in Dental Education. *American Dental Education Association* [Online Presentation]. Available at: <http://www5.adea.org/tde/mainindex.htm>. Accessed October 2, 2008.

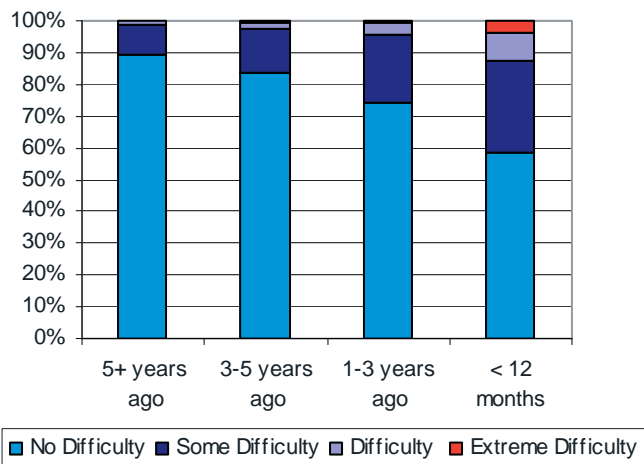
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



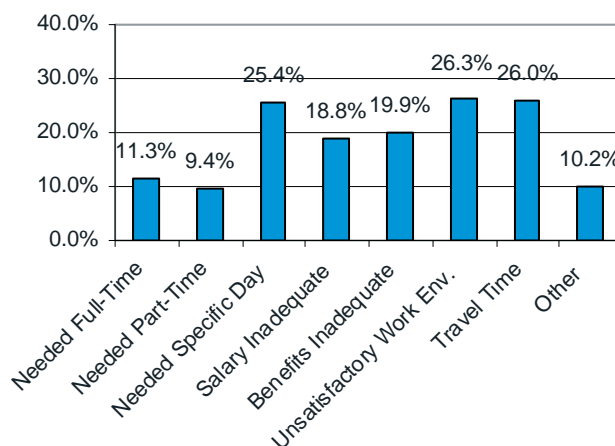
In a 2006 statewide sample survey, dental hygienists reported the number of RDH vacancies in their primary clinical practice. Statewide only 2.8% of practices had a full-time position available, while 11.8% had a part-time position available. There was wide regional variation in the percent of practices with vacant positions, ranging from 0%-5% for full-time positions, and 7.1%-20.8% for part-time positions. The data likely underreport vacancies as they are only for practices where an RDH already worked, and would not include dental practices with a vacancy where no RDH currently was employed. Alternately, only about half of dentists in the state report employing RDHs at all.⁸

In 2005, 9.9% of RDHs reported they were actively looking for work. The dental hygiene labor market contracted significantly between 2000 and 2005. Over 40% of hygienists who had looked for work in the past 12 months (indicating the year 2005) reported some level of difficulty finding employment, up from only 11% five years prior (indicating the year 2000). However, the majority of hygienists (59.4%) still reported “no difficulty” finding employment in 2005.

Clinical RDH's Level of Difficulty Finding Employment When Last Sought (2005-2006)



Clinical RDH's Type of Difficulty Encountered Finding Employment the Last 12 Months (2005-2006)



The type of difficulty encountered in the prior 12 months varied, with the top difficulties reported being: (1) could not find a satisfactory work environment (26.3%); (2) long travel times (26.0%); and (3) unable to find employment on a specific day (25.4%). Clinical RDHs were asked their opinion of local supply of RDHs. The response was mixed with 12.1% reporting too many hygienists, 20.4% reporting not enough, and 67.5% reporting adequate supply. The opinion on supply varies by region and is shown in more detail in the regional analyses.

⁸ Pourat N, Roby D, Wyn R, Marcus M. *Findings from the 2003 California Dental Survey*. Los Angeles: UCLA Center for Health Policy Research; November 2005.

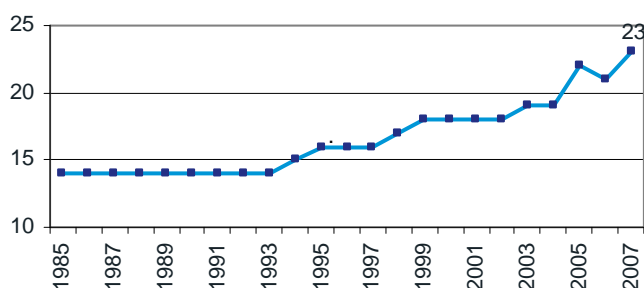
The Supply of Dental Hygienists in California

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

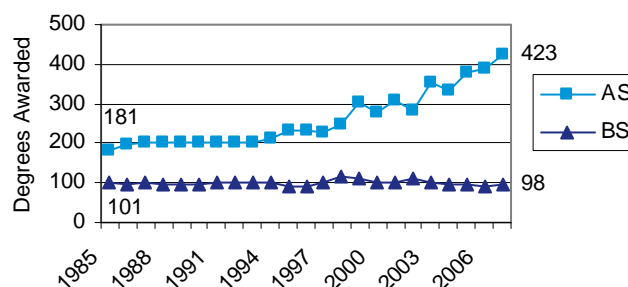
Inflow of Hygienists

California, like the nation, has been rapidly expanding the number of dental hygiene programs and graduates. Statewide the number of programs increased 64% in the past 14 years, and stood at 23 programs in 2007. The growth in graduates is even steeper with an 84.8% increase from 1985-2007, indicating not only growth in programs but in class size. All of the growth in graduates has been at the associate degree (or equivalent) level. Although a new baccalaureate program did come on line, another one closed.

Number of Dental Hygiene Education Programs in California (1985-2007)

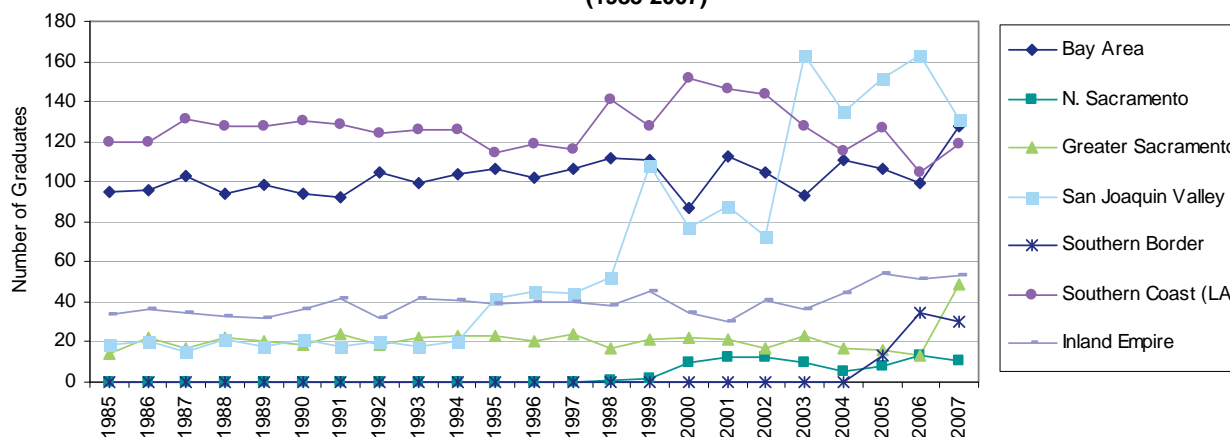


Degree Type Awarded by California Dental Hygiene Programs (1985-2007)



Dental hygiene programs are not distributed evenly around the state. Only seven of eleven economic regions have one or more dental hygiene programs. The number of graduates in each region varies over time. Significant growth was experienced in the San Joaquin Valley, Southern Border and Greater Sacramento regions, while mixed growth was experienced in the Bay Area, Northern Sacramento Area, and the Inland Empire. Some decline was seen in the Southern Coast (Los Angeles) region.

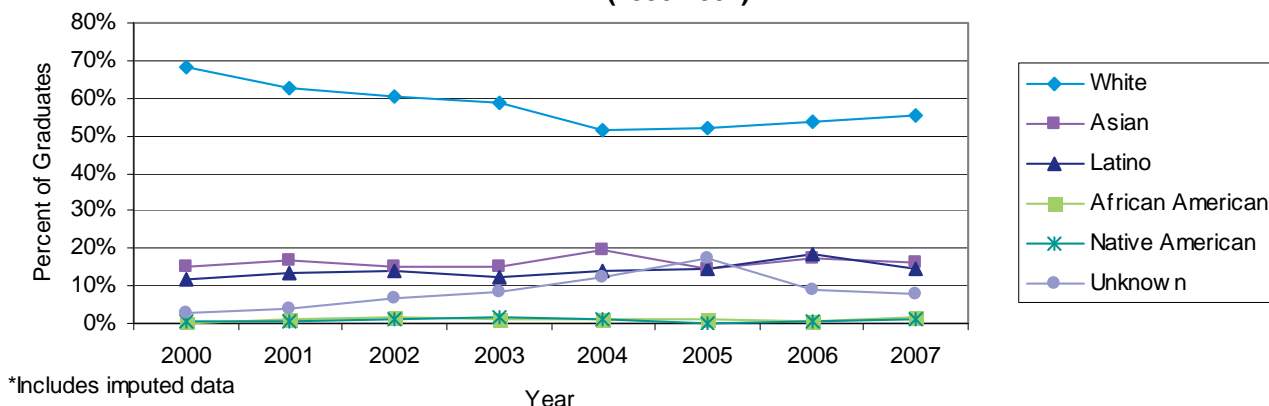
Regional Distribution of Dental Hygiene Graduates from California Programs (1985-2007)



*Regions not listed do not have a dental hygiene education program

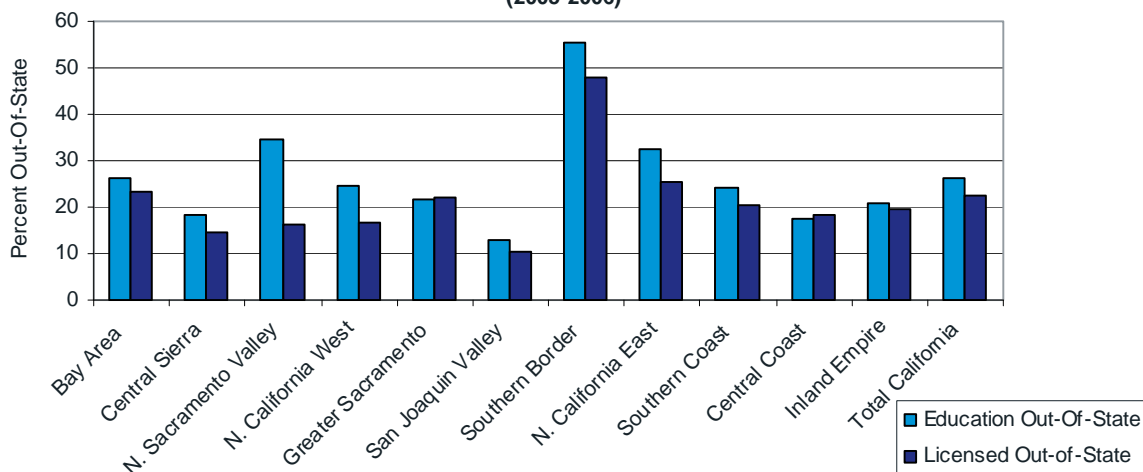
The diversity of the health care workforce is an ongoing concern. Dental hygiene has been traditionally a white female profession. The gender composition of graduates changed very little, with male graduates rising from 3.5% to 6.9% of all graduates from 1995-2007. The racial/ethnic composition of graduates changed with 44.5% of graduates in 2007 from a non-white group, up from 31.8% in 1995, but slightly down from 48.5% in 2004.

Racial Distribution of Dental Hygiene Graduates from California Programs (1995-2007)



The migration pattern of dental hygiene graduates is very difficult to track. Educators report that individuals seeking hygiene education prefer to stay close to where they live, but many are willing to relocate for their education. How likely they are to return is unknown. In the 2005-06 statewide sample survey, licensed providers reported where they were first licensed, demonstrating the extent to which local labor markets depend on an out-of-state supply of practitioners. According to the survey 22.6% of the state's hygiene workforce received their first dental hygiene license in another state, and according to license file data, a similar number, 26.2%, were educated out of state. Data show that older hygienists are more likely to have been educated and licensed outside of California, reflecting a growing trend towards home grown dental hygiene graduates.

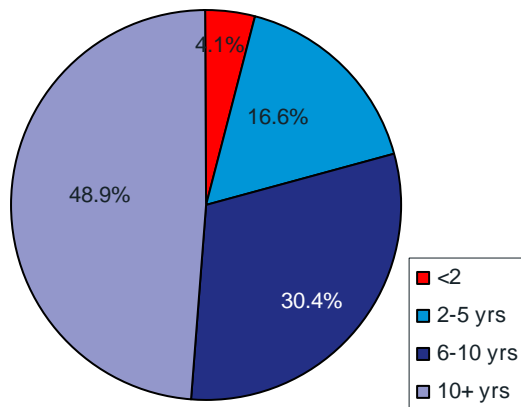
Percent of Active RDHs in California with Out-of-State Dental Hygiene Education and First Licensure (2005-2006)



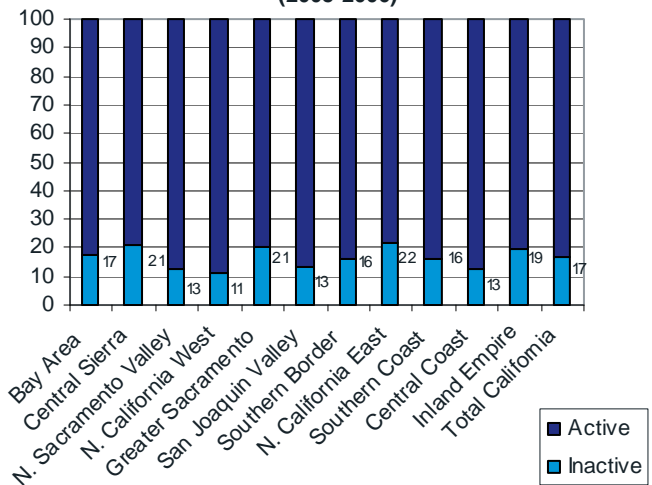
Outflow of Hygienists

The health care workforce is aging, and dental hygiene practitioners reflect this general trend; 4.1% of clinical RDHs in the state (about 450 individuals) expect to retire in less than 2 years, and another 16.5% (about 1811 individuals) expect to retire in 2 to 5 years. Currently, new graduates exceed RDHs leaving the profession. If graduation rates remain stable there should be net increase of about 350 hygienists statewide by 2010. Looking forward, 51.1% of active RDHs say they intend to retire by 2015, which would result in a net loss of 537 RDHs statewide. With the continued in-migration of another 16% annually (current rate for younger RDHs) and California graduation rates this becomes a net gain of just over 300 RDHs statewide by 2015. It is unclear whether or not the inflow of RDHs to California and new graduates will meet demand for dental hygiene services as there is wide variation by region.

Clinical RDHs Reported Years Left in Practice in California (2005-2006)

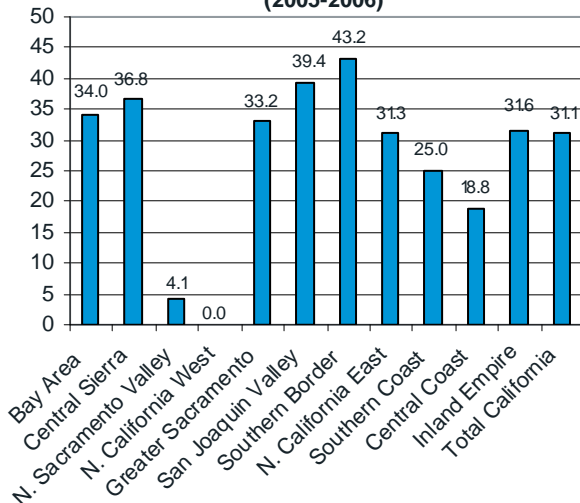


Percent of Licensed RDHs Currently Active in Practice in California (2005-2006)



One sixth of RDHs with an active license are not currently working. Of this group, just over 10% report they are retired, and just under 10% report that they are not working due to family responsibilities. The remaining 80% report a variety of reasons for not working in dental hygiene, such as change of careers, returning to school, health reasons or moving. Roughly one-third (31%) of RDHs who are not currently working report that they expect to return to dental hygiene.

Percent of Inactive RDHs Planning to Return to Work in California (2005-2006)



This represents about 700 individuals returning to the workforce unless the returns are offset by new temporary or permanent exits from the labor market.

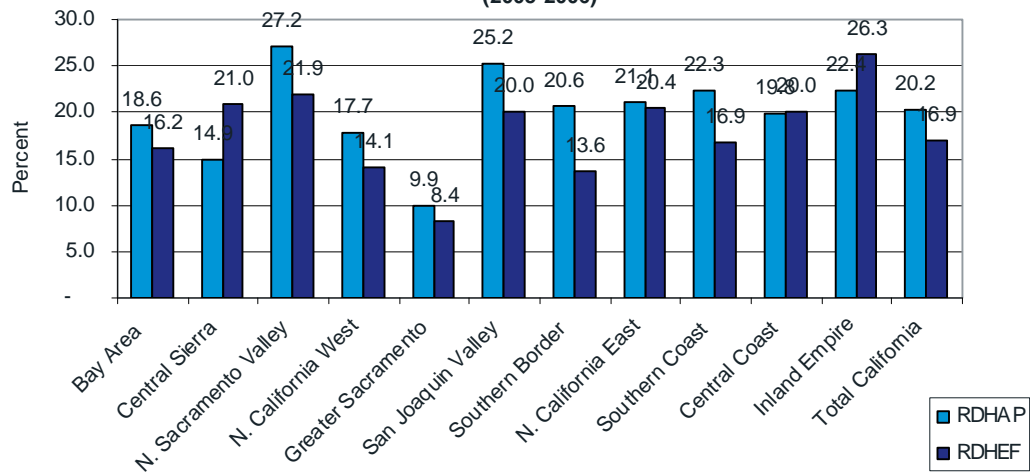
There is variation by region in the expectation of returning to the workforce, with some northern regions having virtually no expected returns, and the central valley and southern regions having higher than average expected returns. This is due to the age mix. Younger RDHs, often stop working to take care of family responsibilities and expect to return, while older RDHs simply retire. As is the case with other health professions, many RDHs keep their licenses active even though they are not working, just in case they need to return to work in the future.

Another reason RDHs leave the workforce is for further education. However, very few (2.6%) RDHs are currently enrolled in an advanced education program. Of this small group, 68.5% are in a non-dental program which may remove them from the profession, 3.6% are in dental school, and 27.9% are in an Alternative Practice (AP) or Extended Function (EF) program. California is unique in having two additional licensure categories for dental hygienist: RDH in Alternative Practice (AP) and RDH in Extended Function (EF). About one fifth of active RDHs expressed interest in pursuing one or both of the licensure categories (see chart below), which may take them temporarily out of the hygiene workforce. However given the flexibility of RDH schedules, many continue to work one or two days a week. Long term the AP and EF programs may move some RDHs to a non-traditional practice, which means they would still be providing dental hygiene services to the population, but they would not be employed by a dentist. Enrollment in the AP programs has stabilized at around 40 individuals per year, and very few RDHs are licensed as EFs.

In summary, the statewide labor market will be expanding in the short term due to rapid growth in education programs outstripping exits. However, by 2015 this trend may reverse. Whether or not this growth will meet the demand for hygiene services in dental offices and the need for hygiene services for the population is complicated by the

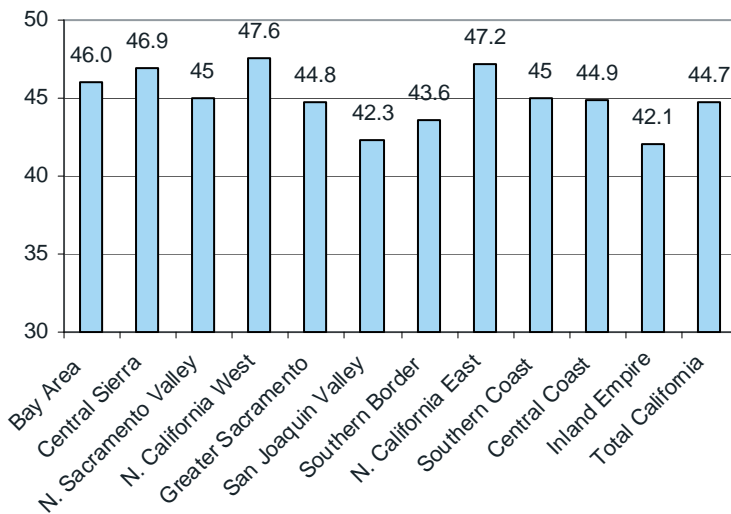
uneven employment of RDHs and the ability of the population to access affordable hygiene services. The next section summarizes the current state of the labor market.

Likelihood of Pursuing Additional Dental Hygiene Education
Active RDHs in California
(2005-2006)



The California Dental Hygiene Labor Market

Average Age of Active RDHs
by California Region
(2005-2006)



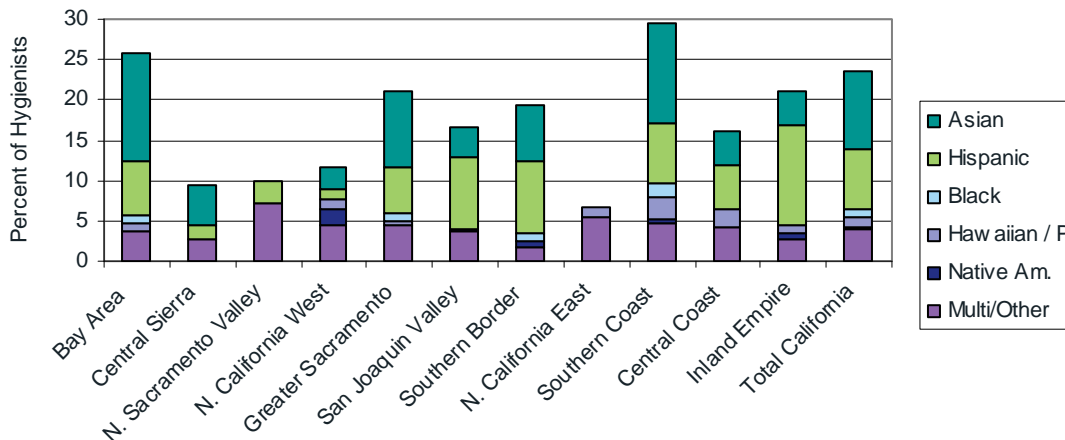
Demographics & Educational Level

The average age of an RDH in California is 44.7, however this varies by region. Of active RDHs, 72.5% are married, and 55.4% have children at home. The gender, racial and ethnic diversity of the hygiene workforce does not match the population, with only 2.5% of active RDHs being male, and 76.6% of active RDHs being white.

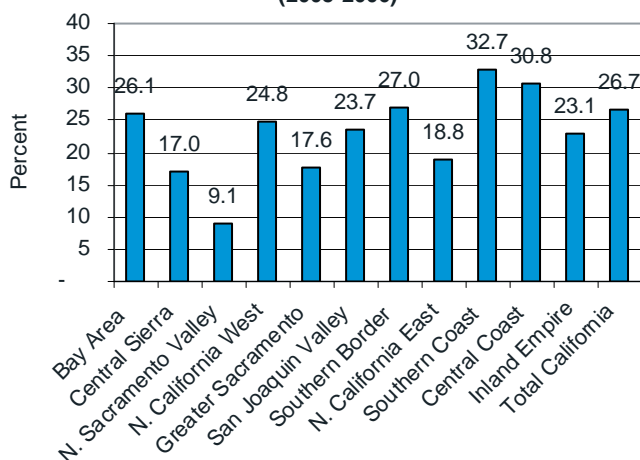
The overall proportion of minority RDHs and their distribution in the workforce varies widely by region. The Southern Coast (LA) region and the Bay Area have the highest

percent of non-white active RDHs. Asian RDHs make up 9.5% of the statewide RDH population, with Hispanic RDHs close behind at 7.4%. Of active RDHs, 26.7% report that they can communicate with their patients in a language other than English. The majority of bi-lingual RDHs cite Spanish as the language they can speak, although 36 different languages were listed as spoken by RDHs in California.

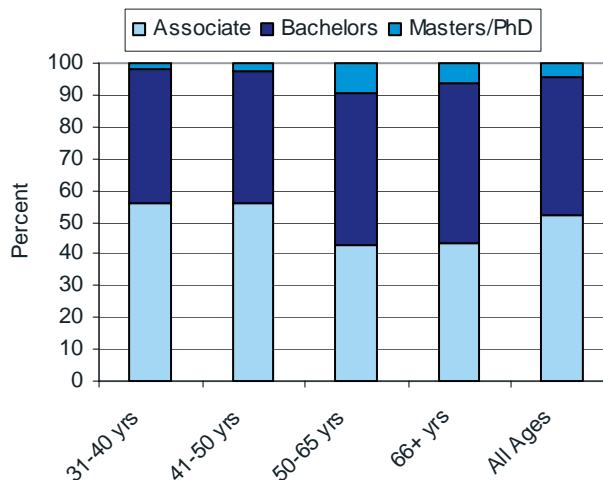
Racial/Ethnic Distribution of Non-White Active RDHs in California (2005-2006)



Percent of Active RDH's in California able to Functionally Communicate with Patients in a Language other than English (2005-2006)



Active RDHs Highest Degree Attained in Any Field by Age Category (2005-2006)



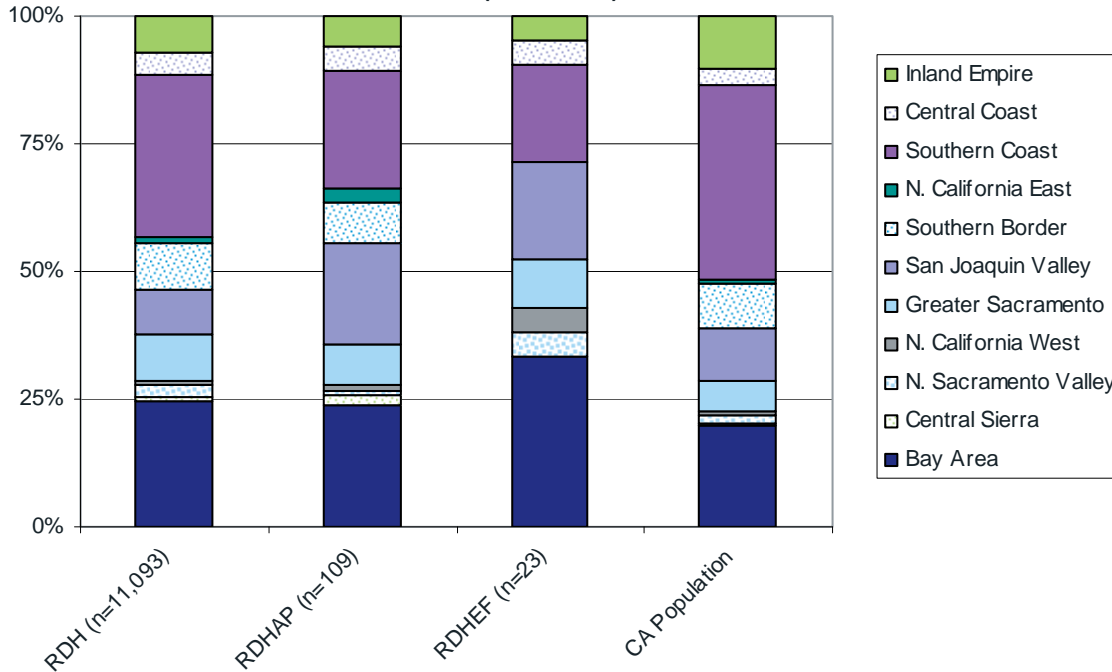
The distribution of the educational attainment (measured as highest degree in any field, not necessarily dental hygiene) for RDHs statewide is 52.2% associate degree, 43.2% baccalaureate degree and 4.6% masters or doctorate degrees. Given the expansion of associate degree programs, the trend is for younger RDHs to be more likely to have received an associate degree and older RDHs more likely to have received a baccalaureate degree or higher.

Practice Characteristics

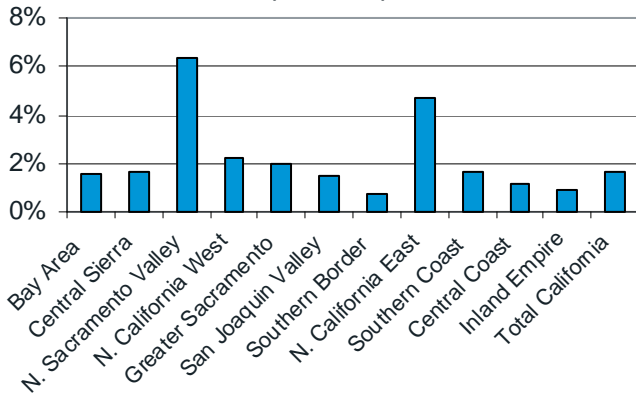
The vast majority (98.8%) of hygienists are licensed only as an RDH. A growing number of RDHs are receiving advanced licenses as RDHAPs, although only a few have received the RDHEF license. The advanced licensees have specific roles in the delivery of dental hygiene care; RDHAPs focus on alternative practices with underserved communities, and RDHEF's work in extended function within a dental practice or

dental clinic to improve efficiency of the practice. There is regional variation in the distribution of RDHAP & RDHEF providers suggesting that demand may be greater in some areas than others. It is important to note that the RDHAP population has more than doubled since the data were collected, and may or may not be similarly distributed today.

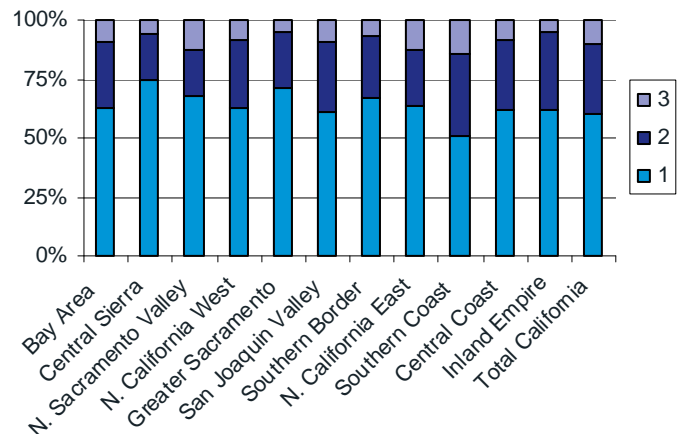
**Distribution of Active RDHs, RDHAPs, RDHEFs and Total Population
By Region of California
(2005-2006)**



**Percent of Active RDHs Working
in Non-Clinical Roles
(2005-2006)**



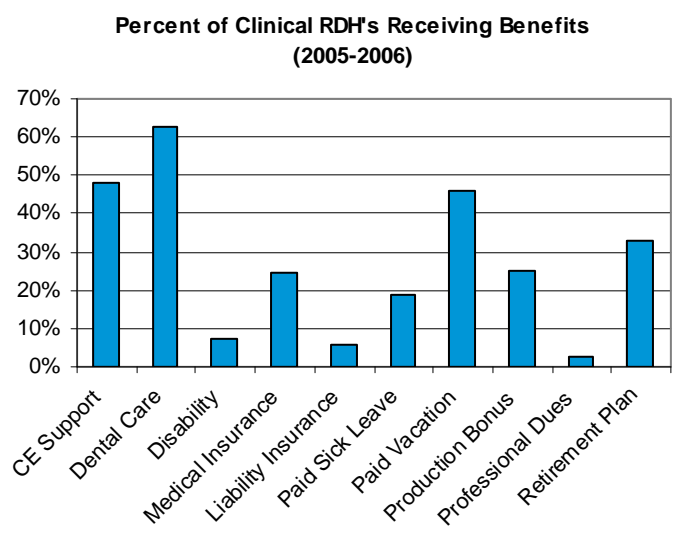
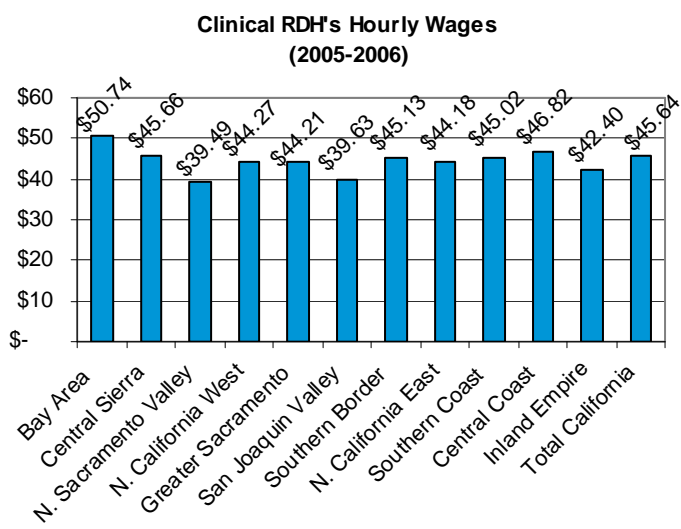
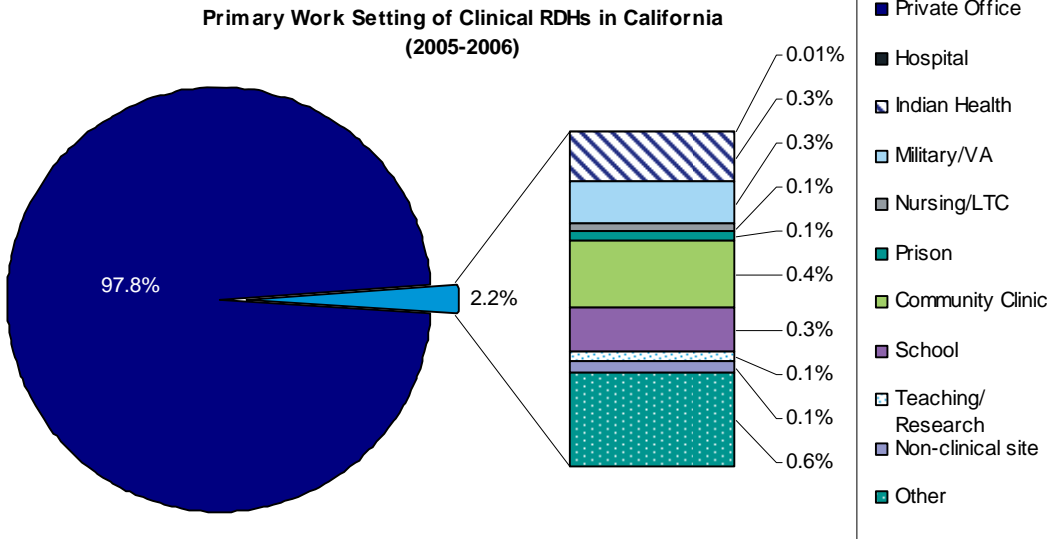
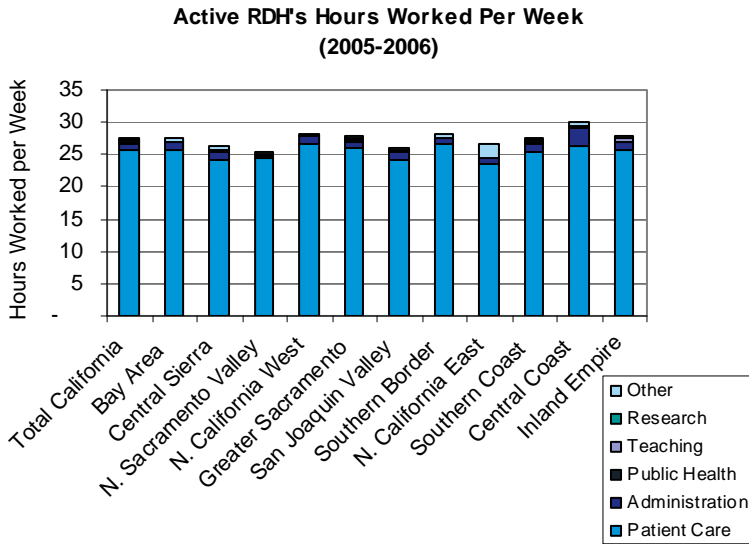
**Clinical RDHs Reported Number of Practice Sites
(2005-2006)**



One reason the dental hygiene labor market is difficult to track is that an individual hygienist may work in multiple different practice locations, and there is variation in the number of days per week worked. On average, RDHs in the state work 3.4 days a week, and 46.1 weeks per year. There is not a one-to-one correlation between dental hygiene employment positions and individuals. Statewide, 60% of hygienists have only one practice site, while 30% have two, and another 10% have three or more. A small percentage of RDHs work in non-clinical roles (such as public health coordinators), although in the northern regions the percentages are higher. RDHs work 25.5 hours per week on average, and spend the majority of that time doing direct patient care. On average RDHs stay with their practices for a long time, reporting an average of 9.1 years at their primary practice setting, 6.3 years at their secondary practice setting and 5.4 years at

their third practice setting. The primary work setting of 97.8% of RDHs is in private dental offices. The remaining 2.2% of RDHs are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice and are less than 3.7% of the total settings.

Hourly wages and benefits vary by region with an average of \$45.64 per hour for all RDHs working primarily in clinical practice. Dental care is the most common benefit provided to RDHs, followed by continuing education (CE) support and paid vacation.



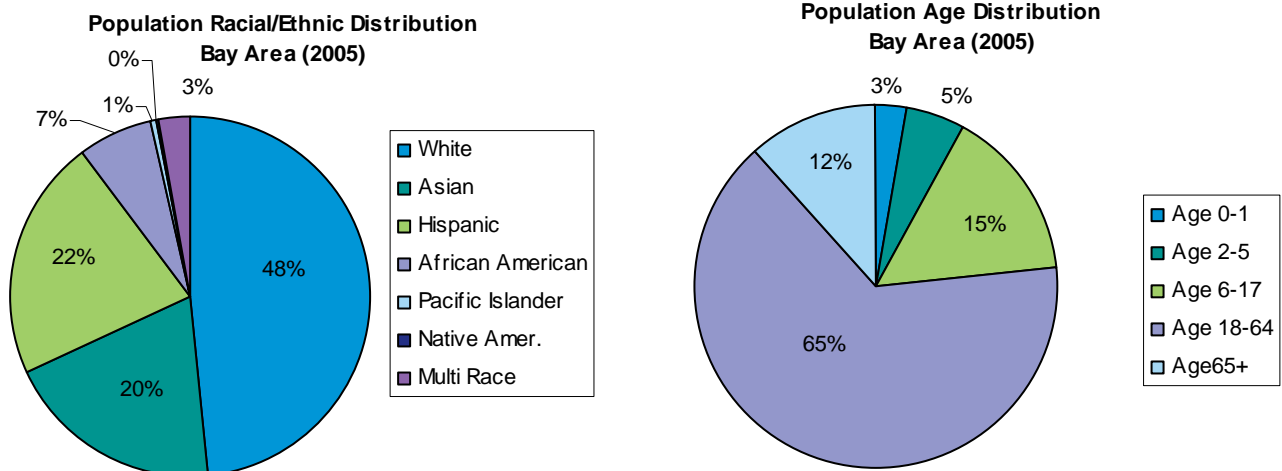
BAY AREA REGIONAL SUMMARY

The San Francisco Bay Area includes the following counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma. In 2005 there were 2807 active registered dental hygienists (RDHs) in this region.

- In 2005, the economic conditions of the Bay Area region were the best in the state. The population is the second largest and one of the most diverse in the state.
- The Bay Area has the highest supply of dentists in the state, combined with a higher than average supply of hygienists, resulting in a similar number of RDHs per dentist in the region compared to statewide.
- The RDH population in the region is declining, a stark contrast to growth in the general population and dentist population. New graduates in the region are projected to outpace expected retirements/exits from the workforce in the near term. In-migration from other regions and out of state seem to be higher in the region, adding to supply. Although the percentages of in and out migration are unknown, there is likely a large out-migration of graduates given the decrease in overall numbers in the past few years.
- Compared to the state as a whole, wages in the region are higher and benefits are more prevalent there are fewer full and part-time RDH vacancies, a smaller perception of too many RDHs, a greater proportion RDHs looking for work, and equal difficulty overall finding work, with a wide range of difficulties reported.
- The workforce in the region is more diverse, older and equally educated as the RDH workforce statewide. A smaller percent of RDHs in the region are working in non-traditional settings than statewide.
- Overall, indicators show a very mixed labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

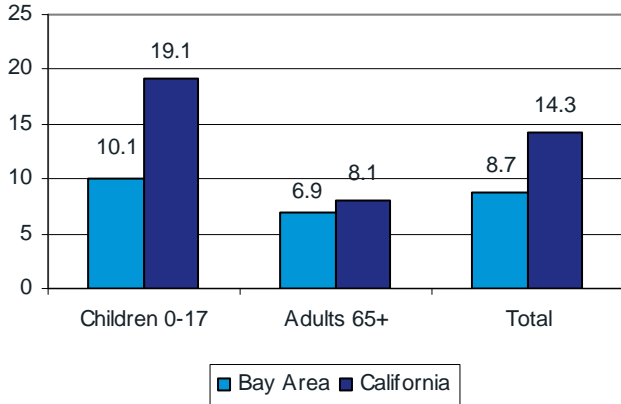
Demand for Dental Hygienists in the Bay Area

The demand for RDHs in the Bay Area is driven by dental offices' response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. The Bay Area has lower than average poverty rates and higher than average income compared with the state as a whole, and hence a higher capacity to pay for care. In 2005, the population of the Bay Area was 7,348,547 -- 19.9% of the total population of the State. Compared with California as a whole, the general population in the Bay Area consists of larger proportions of Asians and African-Americans, smaller proportions of Hispanics and whites, and smaller proportion of children ages 6-17.

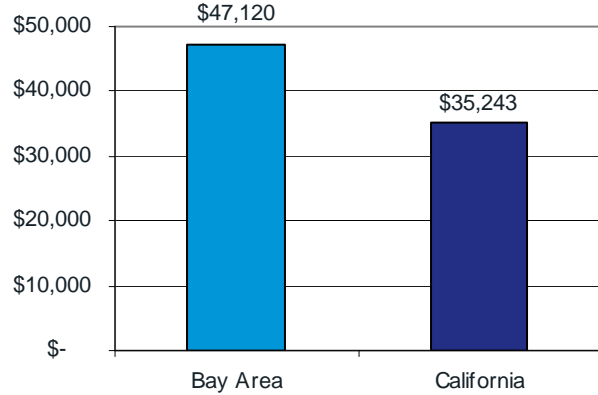


The general population, dentist population and RDH population in the Bay Area are growing more slowly in comparison to California as a whole. The supply of RDHs is stable relative to overall population growth, but it is not keeping pace with the supply of dentists. There is a high concentration of dentists in the region, (91.5/100,000 population) resulting from the fact that 26.0% of California's general practice dentists live in this region, compared with only 19.9% of California's population.

**Percent of Population in Poverty
Bay Area (2005)**

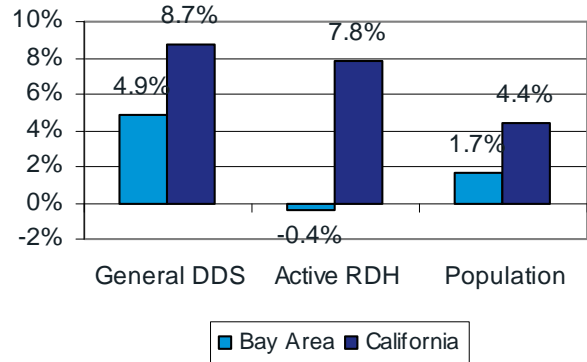


**Per Capita Income
Bay Area (2005)**

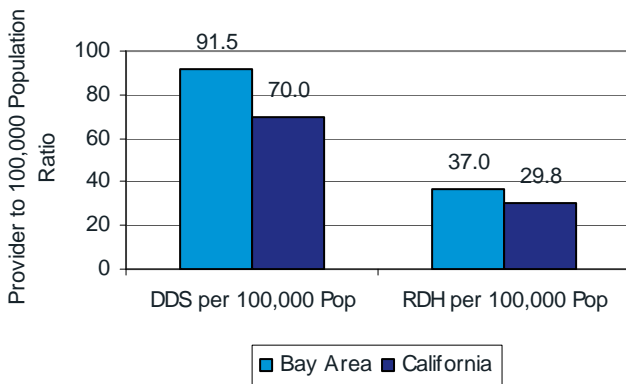


The Bay Area's RDH population declined 0.4% in the past three years, yet the Bay Area still has a greater share (24.7%) of the State's RDH population than total population, resulting in a ratio of 37.0 RDH per 100,000 population. The Bay Area has 0.40 hygienists per dentist, slightly less than the statewide average of 0.43. There are fewer reported RDH vacancies in Bay Area dental practices where RDHs are currently employed than reported statewide. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

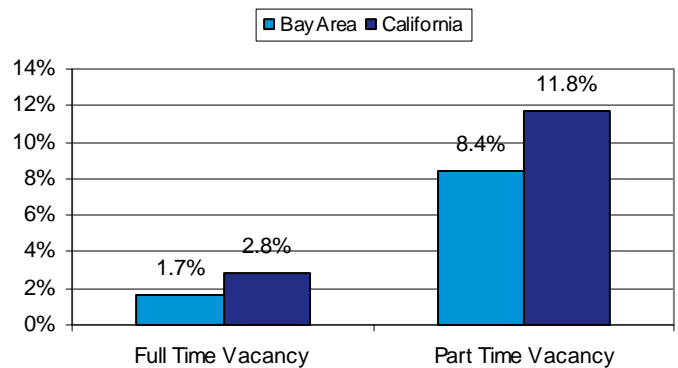
**Percent Increase of General DDS, Active RDH
and Population, Bay Area (2002-2005)**



**Dentists and Hygienists per 100,000 Population
Bay Area (2005)**



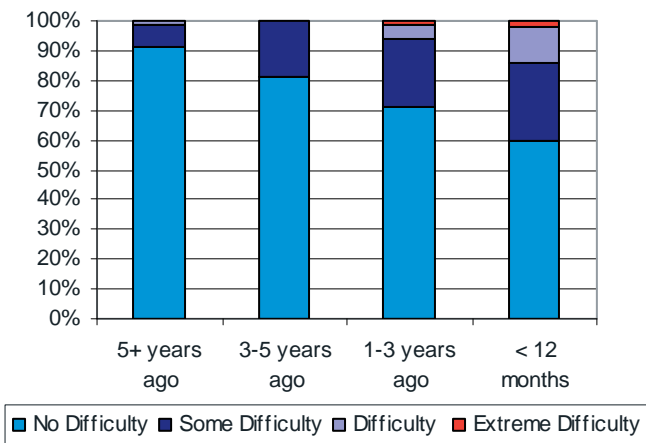
**Percent of Clinical RDH's Reporting One or More
RDH Vacancies in their Primary Practice
(2005-2006)**



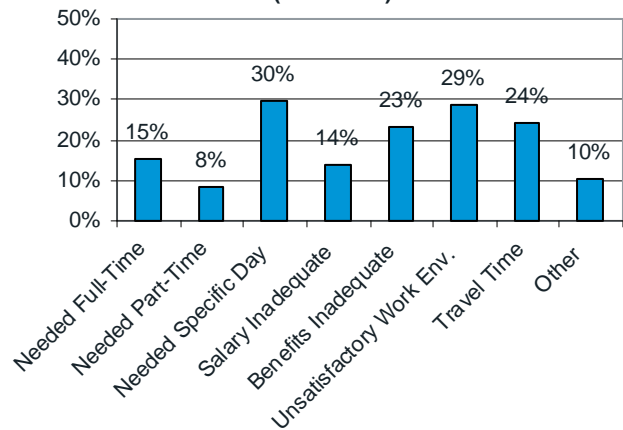
Between 2000 and 2005 the dental hygiene labor market in the Bay Area experienced a similar contraction as was noted statewide. In 2005, 10.5% of Bay Area RDHs reported they were actively looking for work and on average were seeking an additional 9.7 hours of work.

RDHs level of difficulty finding employment in the Bay Area has increased in recent years, with 40% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, 30% reported that they were seeking work on one specific day and could not find it. Unsatisfactory work settings were reported by 29% of the respondents, with travel time and benefit problems reported by 24% and 23% respectively. Bay Area RDHs report a mixed perception of supply of RDHs in the Bay Area, with 70.2% reporting an adequate supply, 7.9% reporting too many, and 21.9% reporting not enough. Bay Area RDHs were less likely to report a perception of “too many” RDHs than were RDHs are statewide.

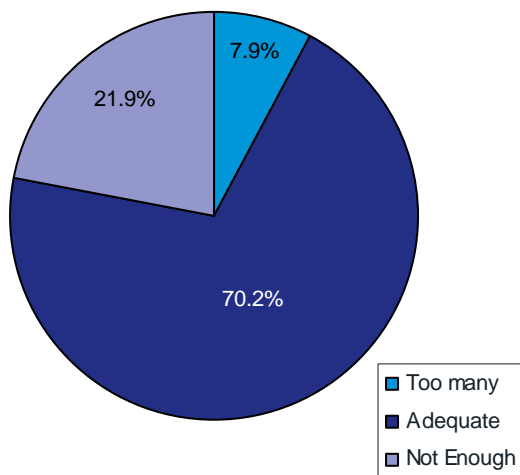
**Clinical RDH's Level of Difficulty Finding Employment When Last Sought
Bay Area (2005-2006)**



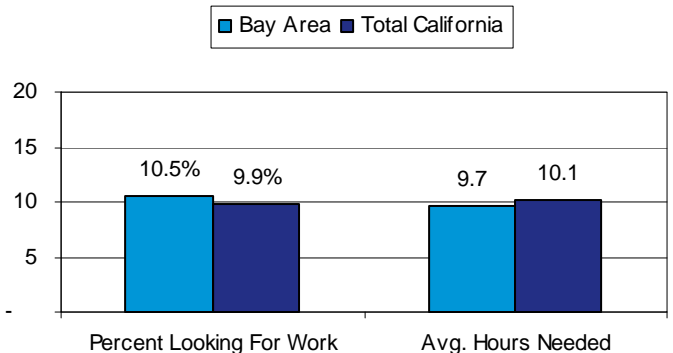
**Type of Difficulty Encountered Finding Employment in the Last 12 Months
Bay Area Clinical RDHs (2005-2006)**



Clinical RDHs Opinion of Local Community Supply of RDHs: Bay Area (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



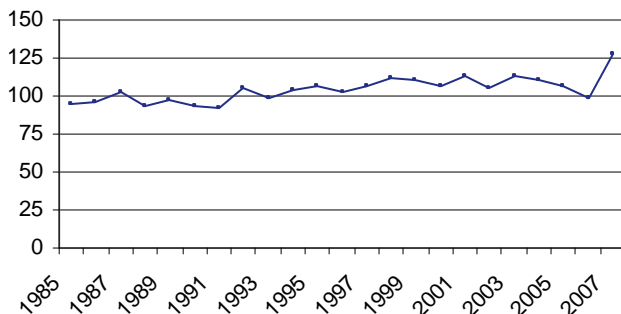
The Supply of Dental Hygienists in the Bay Area

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

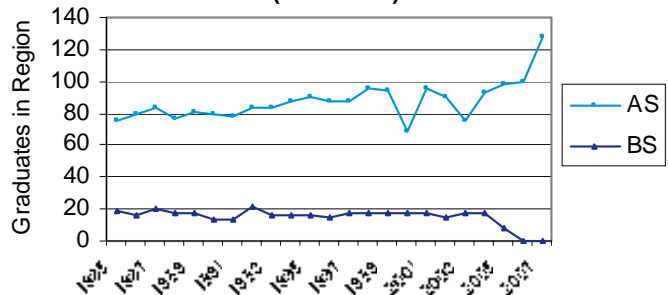
Inflow of Hygienists

The Bay Area has seven dental hygiene programs: Cabrillo College, University of California-San Francisco (stopped enrolling students in 2005), Chabot College, Diablo Valley College, Foothill College, Santa Rosa Junior College, Western Career College-San Jose (graduated first cohort in 2007). The University of the Pacific's RDHAP program is also located in the Bay Area, however this is a distance education program so is not tied geographically to any particular area. In 2007, the Bay Area produced 24.6% of all statewide graduates. With the closing of the UCSF program, the Bay Area no longer produces any baccalaureate RDHs, however UCSF plans to open a Master's program in 2009. The increase in the total number of graduates and increase in associate degree graduates in the region is due to Western Career College-San Jose graduating its first class in 2007.

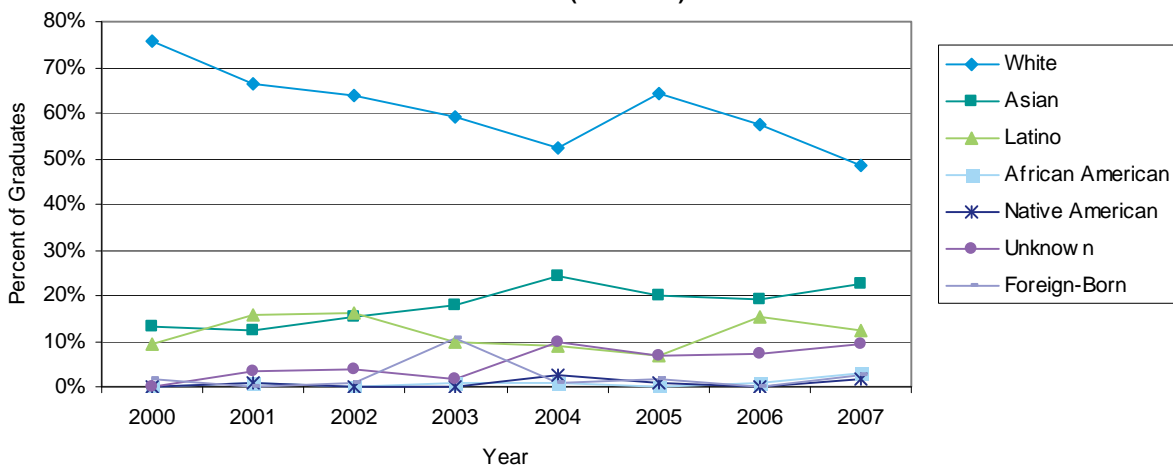
Dental Hygiene Graduates from Bay Area Programs (1985-2007)



Trends in Degree Type Awarded Bay Area Dental Hygiene Programs (1985-2007)



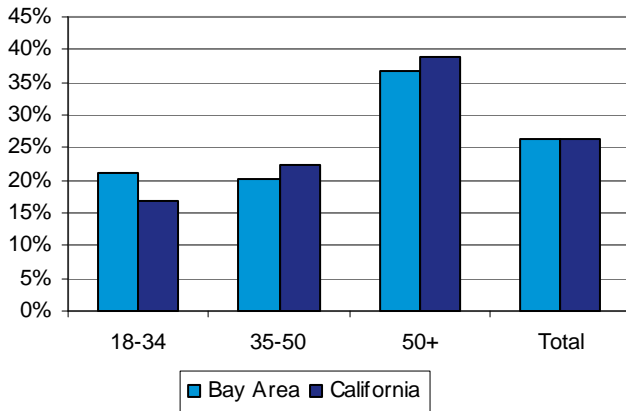
Racial Distribution of Dental Hygiene Graduates from Bay Area Programs (2000-2007)



The RDH workforce is becoming increasingly diverse. In 2007 less than 50% of the graduates were white, down from 76% in 2000. Only 4% of the graduates in the Bay Area are men, compared to 7% statewide.

Another source of labor market supply is migration. In the Bay Area, 26.4% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 23.3% of practicing RDHs in the Bay Area were first licensed out-of-state, compared to 22.6% statewide. Younger RDHs are less likely to be educated out-of-state than older RDHs, however the Bay Area tends to have a higher proportion of out-of-state educated RDHs compared to California overall.

Percent of Active RDHs Educated Out-Of-State by Age, Bay Area and California (2005-2006)



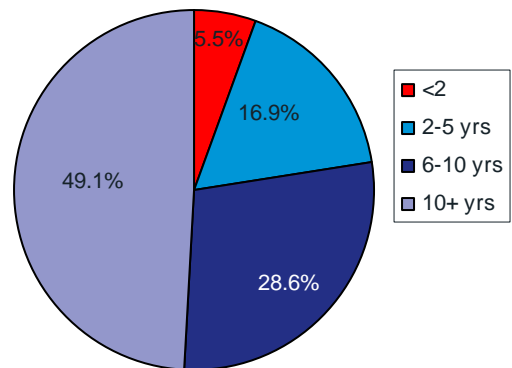
Outflow of Hygienists

A number of Bay Area RDHs (5.4%) report they plan to leave the workforce in the next 2 years (about 147 individuals), with an additional 16.9% expecting to leave in 2-5 years (460 individuals). There are currently 128 graduates annually in the region, if they all remain employed in the Bay Area over the five years there would be 640 entrants, with 607 exits, a slight increase overall. Projected out ten years, with existing graduates and an additional 28.6% of the current workforce exiting, the region would experience a decrease of 149 hygienists, a 5% drop from current supply. Caveats to this projection being that an assumption of full retention is unlikely to hold, in and out migration is unaccounted for, and reported expectations of retirement may not translate into actual exits.

The proportion of actively licensed RDHs in the Bay Area who are currently not working is higher than the statewide average (17.5% vs. 16.6%). The primary reasons reported for being out of the workforce were retirement (31.5%) and family responsibilities for children (24.7%). Of the hygienists not working due to childrearing responsibilities, 65% planned to return to work. Of all RDHs not currently working, 34% expect to return to work.

Less than 2% of RDHs in the Bay Area are enrolled in an education program. The majority of this small group is enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. Just under one-quarter of RDHs in the Bay Area suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

Clinical RDHs Reported Years Left in Practice Bay Area (2005-2006)

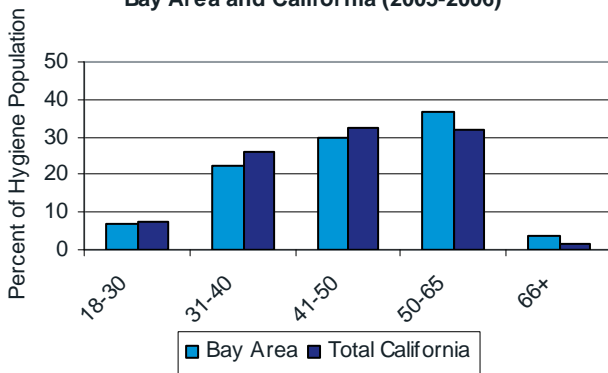


Bay Area Dental Hygiene Labor Market

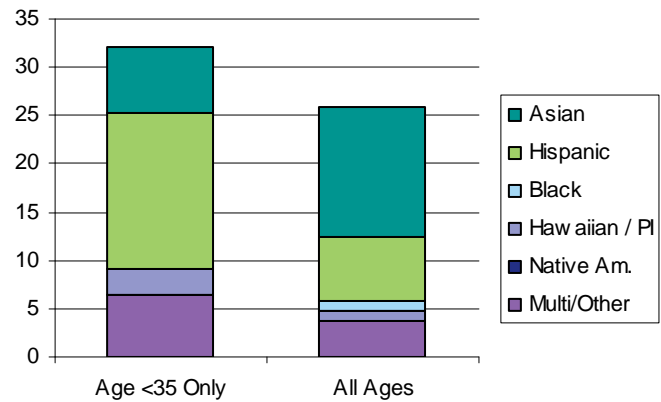
Demographics & Educational Level

The average age of a RDH in the Bay Area is 46 years, slightly older than the statewide average age of 44.7 years. The marital status of Bay Area RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 2.3% of RDHs in the Bay Area. The RDH workforce in the Bay Area is increasingly racially/ethnically diverse. Non-white minority groups represent one-third of RDHs under the age of 35, compared to just over one-quarter of all RDHs in the Bay Area. Just over one-quarter (26.1%) of RDHs in the Bay Area report the ability to functionally communicate with their patients in a language other than English.

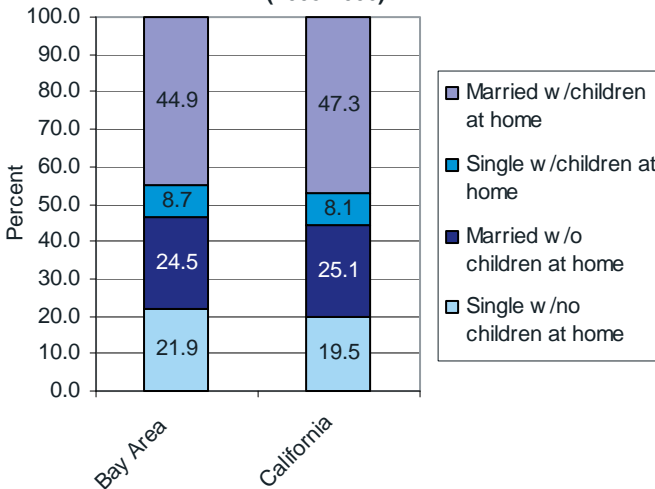
**Age Distribution of Active RDHs
Bay Area and California (2005-2006)**



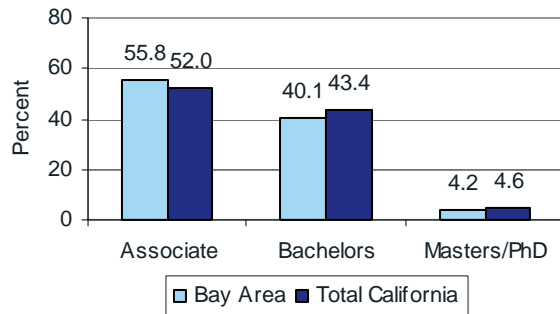
Racial/Ethnic Distribution of Non-White Active RDHs, Total and Age <35 Bay Area (2005-2006)



**Marital Status and Family Responsibilities
Active RDHs, Bay Area and California
(2005-2006)**



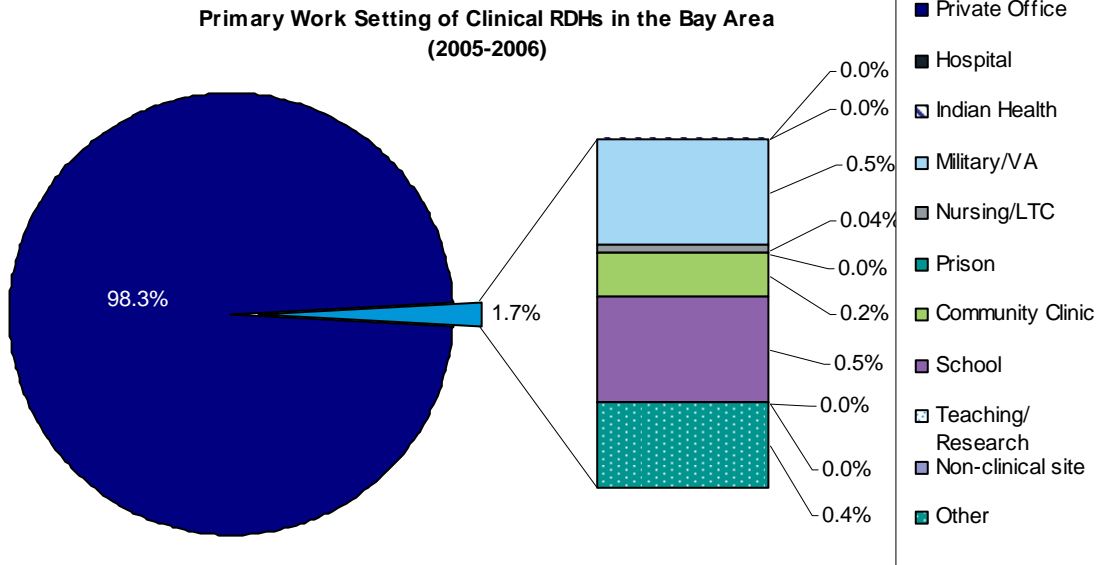
**Highest Degree Obtained In Any Field
Active RDHs, Bay Area and California
(2005-2006)**



Roughly half (55.8%) of Bay Area dental hygienists report an associate degree as the highest level earned in any field, while 40.1% report having earned a baccalaureate degree, and 4.2% a masters degree or PhD. Nationally, statewide and in the Bay Area RDH educational programs are increasingly offered at the associate degree level.

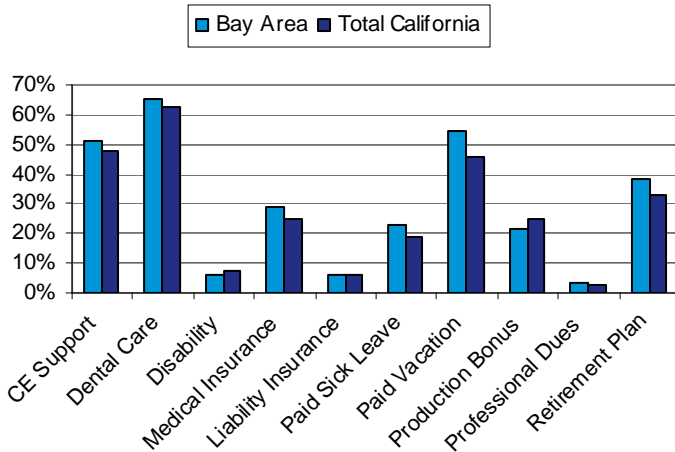
Practice Characteristics

On average, RDHs in the Bay Area work 3.3 days per week, and 45.6 weeks per year, which mirrors statewide trends. Sixty-two percent work in a single setting, 29% have two practice settings, and 9% have three or more settings. Bay Area RDHs tend to stay with their practices for a long time, reporting an average of 9.7 years at their primary practice setting, and if they have them, 6.4 years at their secondary practice setting and 3.7 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research. The primary work setting of 98.3% of RDHs is a private dental office. The 1.7% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below.

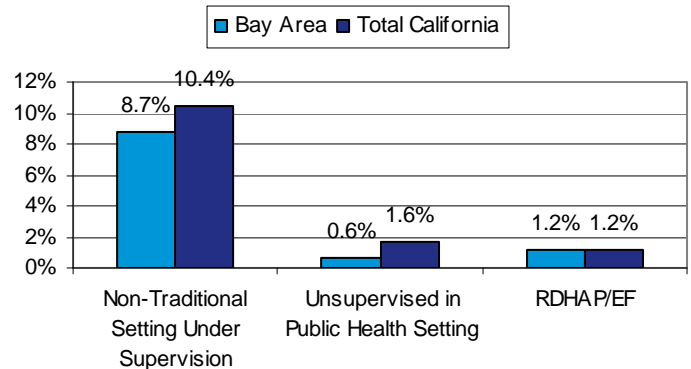


Bay Area RDHs earn on average, \$50.74 per hour, with a standard deviation of \$15.08. This is \$5.10 more than the statewide average hourly wage. The minimum RDH hourly wage reported was \$25/hour and the maximum was \$95 per hour. RDHs in the Bay Area are more likely to receive a number of employment benefits than are RDHs statewide.

Percent of Clinical RDH's Receiving Benefits in the (2005-2006)



Active RDHs in Non-Traditional Settings (2005-2006)



The Bay Area has a smaller proportion of RDHs working in non-traditional settings (outside a dental office or clinic) under supervision or unsupervised in a public health setting, and an average proportion working as an RDHAP/EF. Only 1.5% of RDHs in the Bay Area are doing non-clinical work as their primary work activity. In 2005, the Bay Area had 23.8% of the State's active RDHAPs, and 33.3% of the State's active RDHEFs, yet the APs and EFs were still a small proportion of the overall hygiene workforce. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in the Bay Area is mixed. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

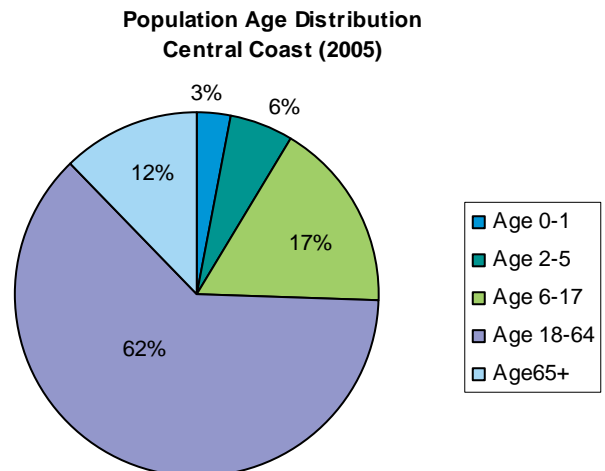
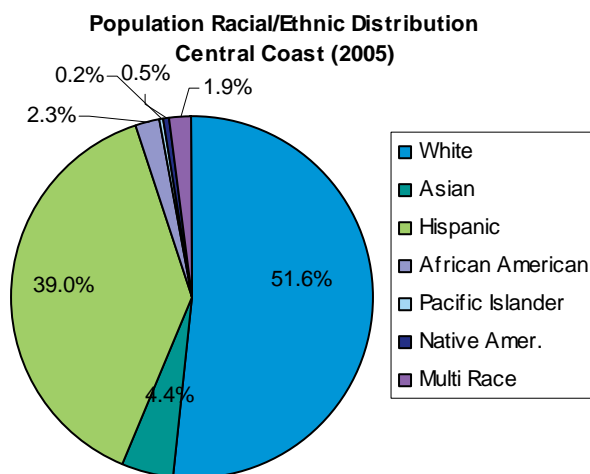
CENTRAL COAST REGIONAL SUMMARY

The Central Coast includes the following counties: San Benito, Monterey, San Luis Obispo, and Santa Barbara. In 2005 there were 488 active registered dental hygienists (RDHs) in this region.

- In 2005, the economic state of the population in the Central Coast region was average and the population proportion was small but quite diverse compared to statewide population data.
- The Central Coast has a lower than average supply of dentists combined with a higher than average supply of hygienists resulting in a greater number of RDHs per dentist in the region than statewide.
- The RDH population in the region is growing more quickly than the general population and the dentist population. Since there is no education program in the region, there are no new graduates from which to project incoming supply. In-migration from other California regions and out-of-state is the sole source of incoming RDHs, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are better than average, benefits are more prevalent, there are equal rates of part-time RDH vacancies, a greater perception of not enough RDHs, a lower percent of RDHs looking for work, and there is equal difficulty finding work, with a wide range of difficulties reported.
- The workforce in the region is less diverse and less highly educated than the RDH workforce statewide. A smaller percent of RDHs in the region are working in non-traditional settings compared to statewide percentages.
- Overall, indicators show an average labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

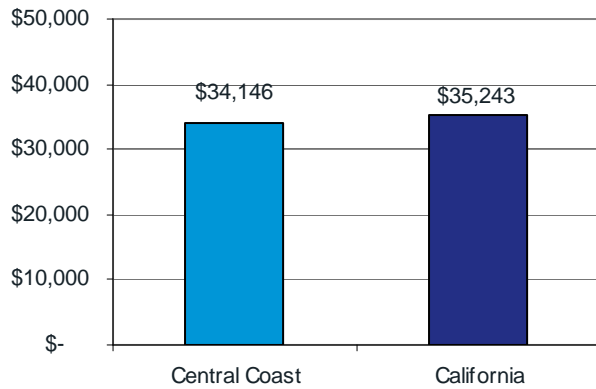
Demand for Dental Hygienists in the Central Coast

The demand for RDHs in the Central Coast is driven by dental offices' response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. The Central Coast has lower than average poverty rates and average per capita income compared with the state as a whole. In 2005, the population of the Central Coast was 1,159,367 - 3.1% of the total state population. Compared with California as a whole, the general population in the Central Coast consists of larger proportions of Hispanic and white populations and similar age distribution.

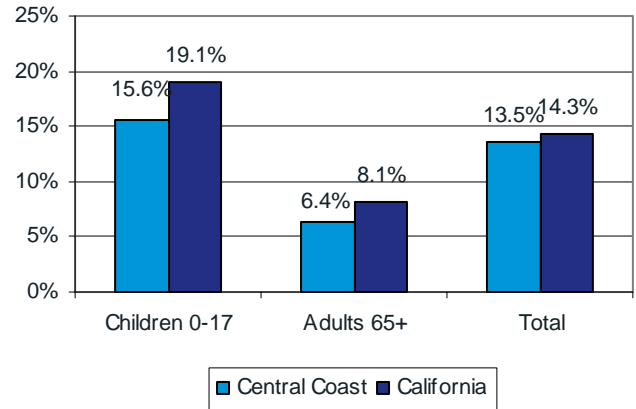


In comparison with California as a whole, the Central Coast general population and the dentist population are growing more slowly. The RDH population in the Central Coast is growing more rapidly than the RDH population statewide, and is outpacing the growth in both dentists and the general population. There is an average supply of dentists in the region, (66.0/100,000 population) given that 3.0% of California's general practice dentists live in this region, compared with 3.1% of California's population.

**Per Capita Income
Central Coast (2005)**

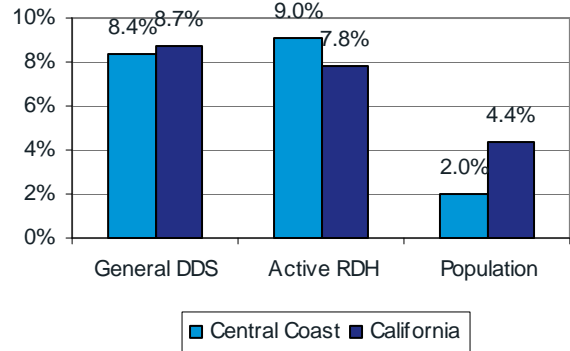


**Percent of Population in Poverty
Central Coast (2005)**

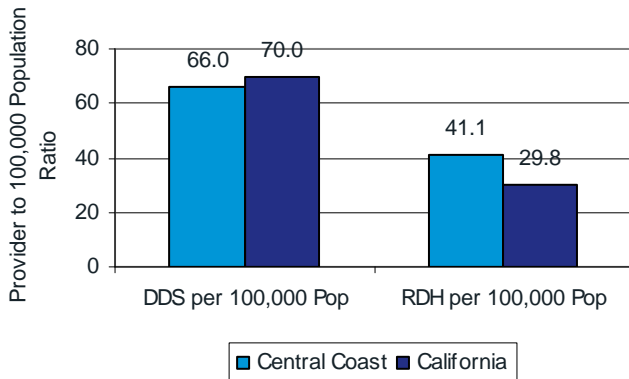


The Central Coast's RDH population increased 9.0% between 2002-2005. The Central Coast has a greater share (4.3%) of the State's RDH population than total population, resulting in a ratio of 41.1/100,000 RDH to population. The Central Coast has 0.62 hygienists per dentist, significantly greater than the statewide average of 0.43. There are greater reported RDH full-time vacancies, and fewer reported full-time vacancies in Central Coast dental practices where RDHs are currently employed than reported statewide. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

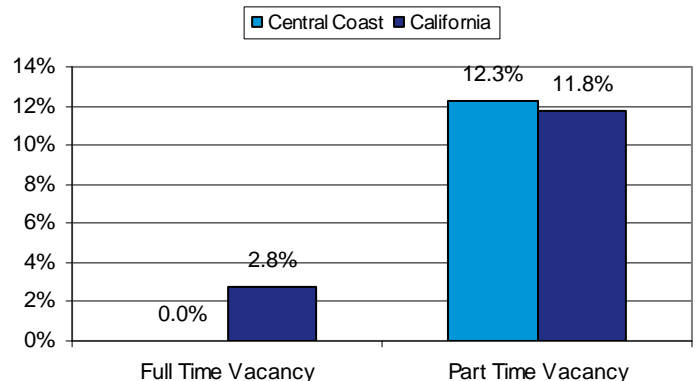
Percent Increase of General DDS, Active RDH and Population, Central Coast (2002-2005)



**Dentists and Hygienists per 100,000 Population
Central Coast (2005)**



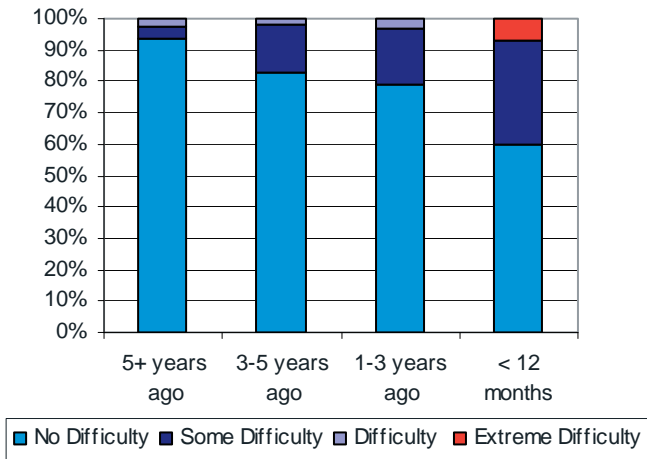
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



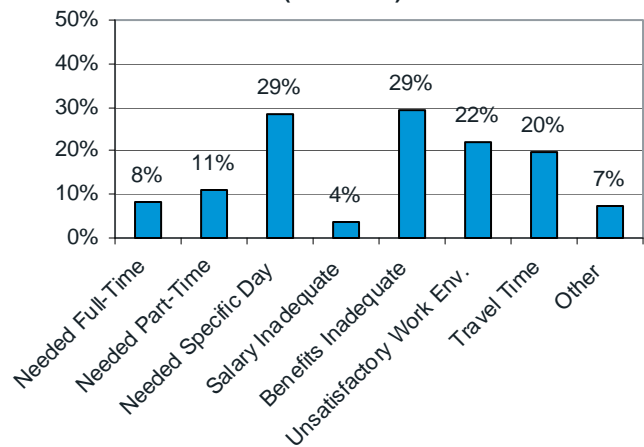
Between 2000 and 2005 the dental hygiene labor market in the Central Coast experienced a similar contraction as was noted statewide. In 2005, 5.9% of Central Coast RDHs reported they were actively looking for work and on average RDHs were looking for 9.4 additional hours of work.

The level of difficulty finding RDH employment in the Central Coast has increased in recent years, with 40% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, 29% reported that they were seeking work on one specific day and could not find it, with the same number reporting unsatisfactory benefits as a difficulty. Unsatisfactory work settings were reported by 22% of the respondents and travel time problems reported by 20% of respondents. Central Coast RDHs report a mixed perception of supply of RDHs in the Central Coast, with 65.8% reporting an adequate supply, 9.2% reporting too many RDHs, and 25.0% reporting not enough RDHs. Central Coast RDHs are more likely to report a perception of “too many” RDHs than RDHs are statewide.

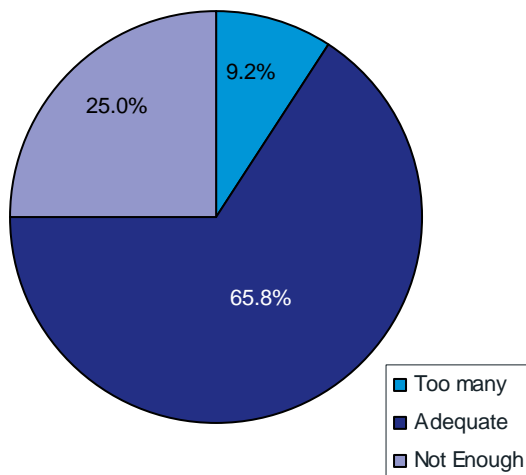
**Clinical RDH's Level of Difficulty Finding Employment When Last Sought
Central Coast (2005-2006)**



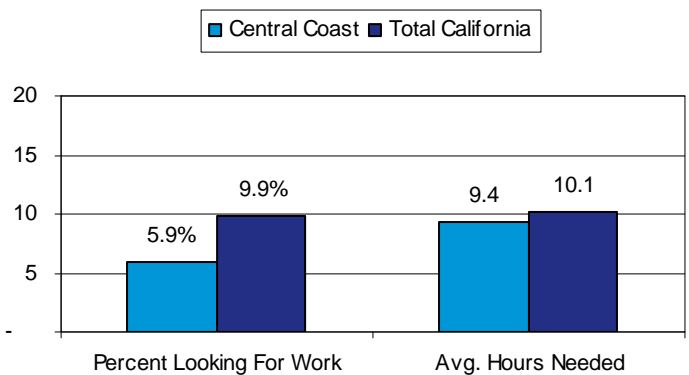
**Type of Difficulty Encountered Finding Employment in the Last 12 Months
Central Coast Clinical RDHs (2005-2006)**



Clinical RDHs Opinion of Local Community Supply of RDHs: Central Coast (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



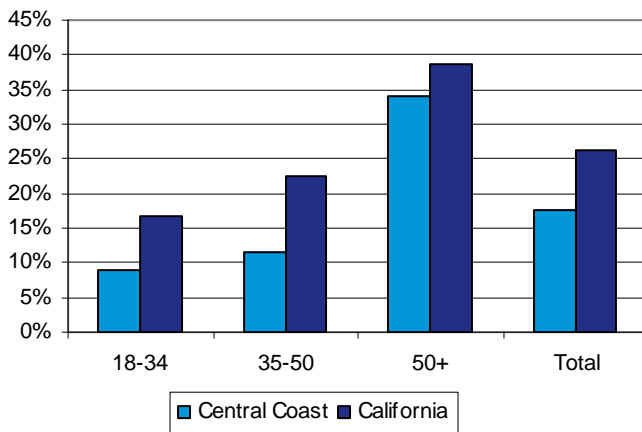
The Supply of Dental Hygienists in the Central Coast

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

Inflow of Hygienists

The Central Coast does not have any dental hygiene programs, but is flanked by the Bay Area which has seven programs, the San Joaquin Valley which has five programs, and the Southern Coast region which has six programs and one RDHAP program. These three areas are likely to be the feeders for the Central Coast region, however specific data on the patterns of new graduates from other regions entering or returning to the Central Coast are not available.

Percent of Active RDHs Educated Out-Of-State by Age, Central Coast and California (2005-2006)



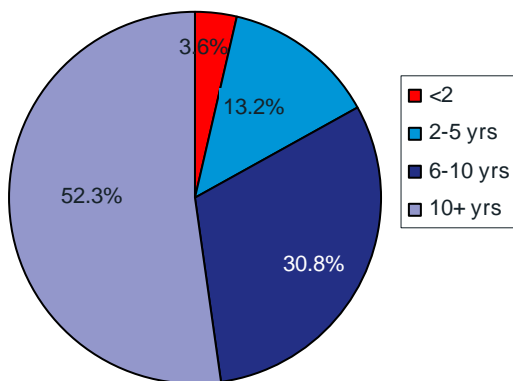
Data on location of first licensure and location of education provide insight into the inter-state migration. In the Central Coast, 17.6% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 18.4% of practicing RDHs in the Central Coast were first licensed out-of-state, compared to 22.2% statewide. Younger RDHs are less likely to be educated out-of-state than older RDHs, and the Central Coast tends to have a much lower proportion of out-of-state educated RDHs compared to California overall.

Outflow of Hygienists

A number of Central Coast RDHs (3.6%) report they plan to leave the workforce in the next 2 years (about 17 individuals), while an additional 13.2% expect to leave in 2-5 years (63 individuals), and another 30.8% expect to leave within 10 years, (150 individuals).

The proportion of actively licensed RDHs in the Central Coast who are currently not working is lower than the statewide average (12.8% vs. 16.6%). The primary reasons reported for being out of the workforce were change of career outside of dentistry (32.6%) and retirement (30.8%). Of all RDHs not currently working, none expected to return to work.

Clinical RDHs Reported Years Left in Practice Central Coast (2005-2006)



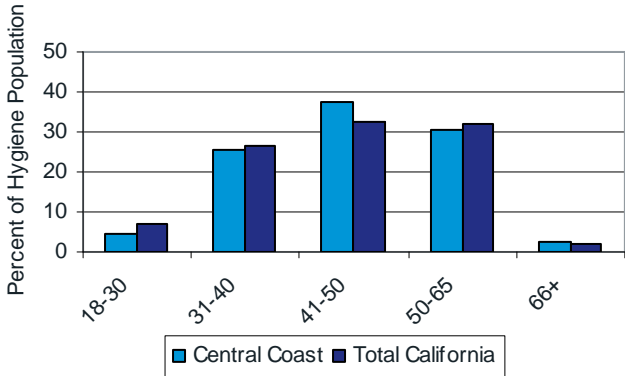
Just 2.8% of RDHs in the Central Coast are enrolled in an education program, all of which are enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. Just under one-fifth of RDHs in the Central Coast suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

Central Coast Dental Hygiene Labor Market

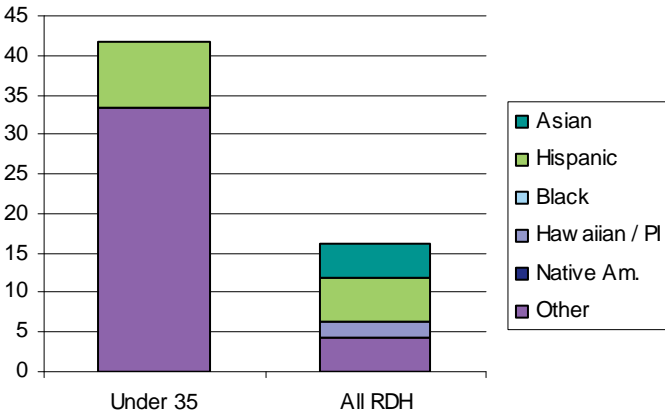
Demographics & Educational Level

The average age of an RDH in the Central Coast is 44.9 years, similar to the statewide average age of 44.7 years. A large proportion of active RDHs are in the 50-65 year old age category. The marital status of Central Coast RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 3.3% of RDHs in the Central Coast. The RDH workforce in the Central Coast is increasingly racially/ethnically diverse. Non-white minority groups represent 42% of RDHs under the age of 35, compared to just over one-sixth of all RDHs in the Central Coast. Just under one-third (30.8%) of Central Coast RDHs report the ability to functionally communicate with their patients in a language other than English.

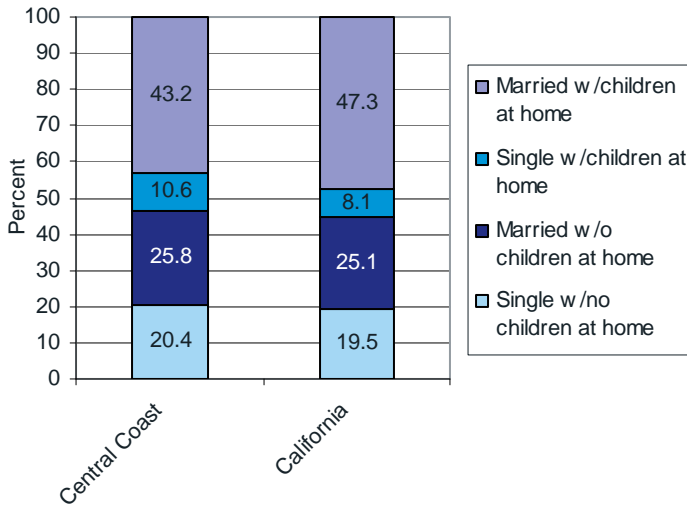
**Age Distribution of Active RDHs
Central Coast and California (2005-2006)**



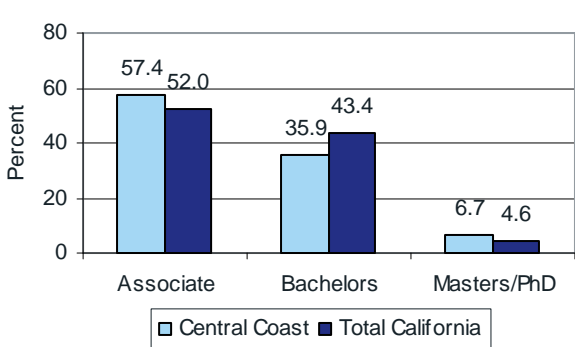
**Racial/Ethnic Distribution of Non-White Active RDHs, Total and Age <35
Central Coast (2005-2006)**



**Marital Status and Family Responsibilities
Active RDHs, Central Coast and California
(2005-2006)**



**Highest Degree Obtained In Any Field
Active RDHs, Central Coast and California
(2005-2006)**

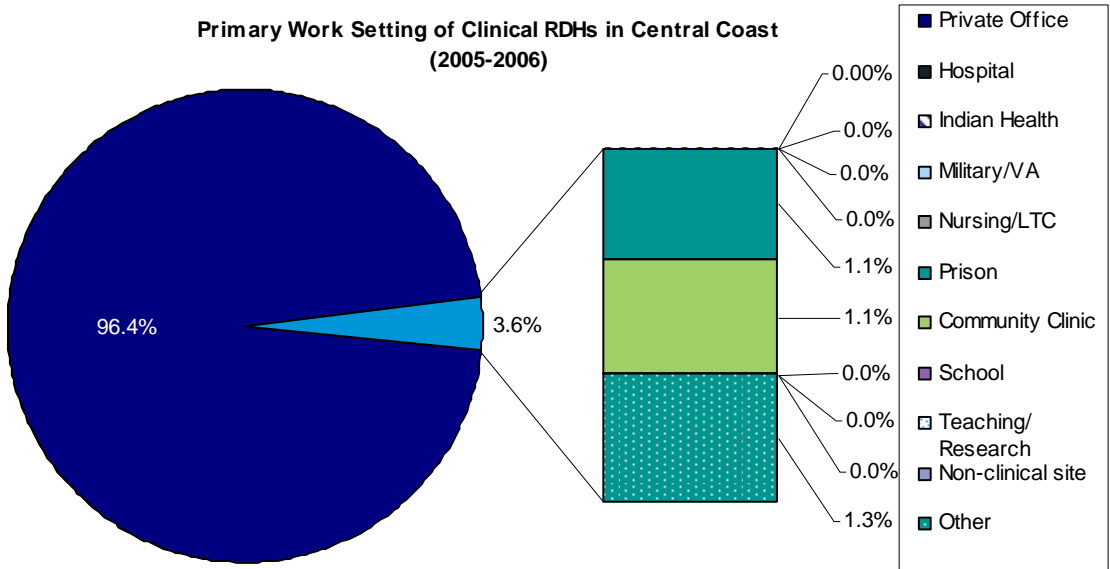


Over half (57.4%) of Central Coast dental hygienists report an associate degree as the highest level earned in any field, while 35.9% report having earned a baccalaureate degree, and 6.7% a masters degree or PhD. Nationally, statewide and in the feeder regions for the Central Coast the trend is the same; RDH educational programs are increasingly offered at the associate degree level.

Practice Characteristics

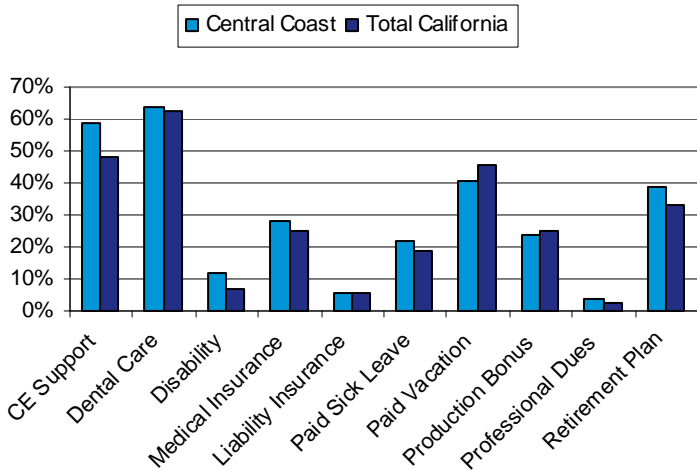
On average, RDHs in the Central Coast work 3.4 days per week, and 45.0 weeks per year, which mirrors statewide trends. Sixty-two percent work in a single setting, 30% have two practice settings, and 8% have three or more settings. Central Coast RDHs tend to stay with their practices for a long time, reporting an average of 8.4 years at their primary practice setting, and if they have them, 6.9 years at their secondary practice setting, and 6.8 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research.

The primary work setting of 96.4% of RDHs is a private dental office. The 3.6% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.

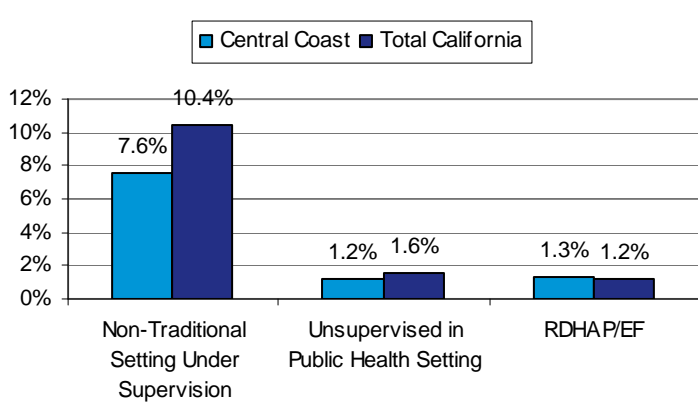


Central Coast RDHs earn on average, \$46.82 per hour, with a standard deviation of \$15.18. This is \$1.18 more than the statewide average hourly wage. The minimum RDH hourly wage reported was \$32.00/hour and the maximum was \$72.50 per hour.

Percent of Clinical RDHs Receiving Benefits (2005-2006)



Active RDHs in Non-Traditional Settings (2005-2006)



RDHs in the Central Coast also are more likely to receive a number of employment benefits than are RDHs statewide, with the exception of paid vacation and production bonuses.

The Central Coast has a smaller proportion of RDHs working in non-traditional settings (outside a dental office or clinic), under supervision or unsupervised in a public health setting than exists statewide, although about average RDHAP/EFs. Only 1.1% of RDHs in the Central Coast are doing non-clinical work as their primary work activity. In 2005, the Central Coast had 5.0% of the State's active RDHAPs, and 4.8% of the State's active RDHEFs, yet the advanced licensed RDHs were still a small proportion of the overall hygiene workforce. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in the Central Coast is about average. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

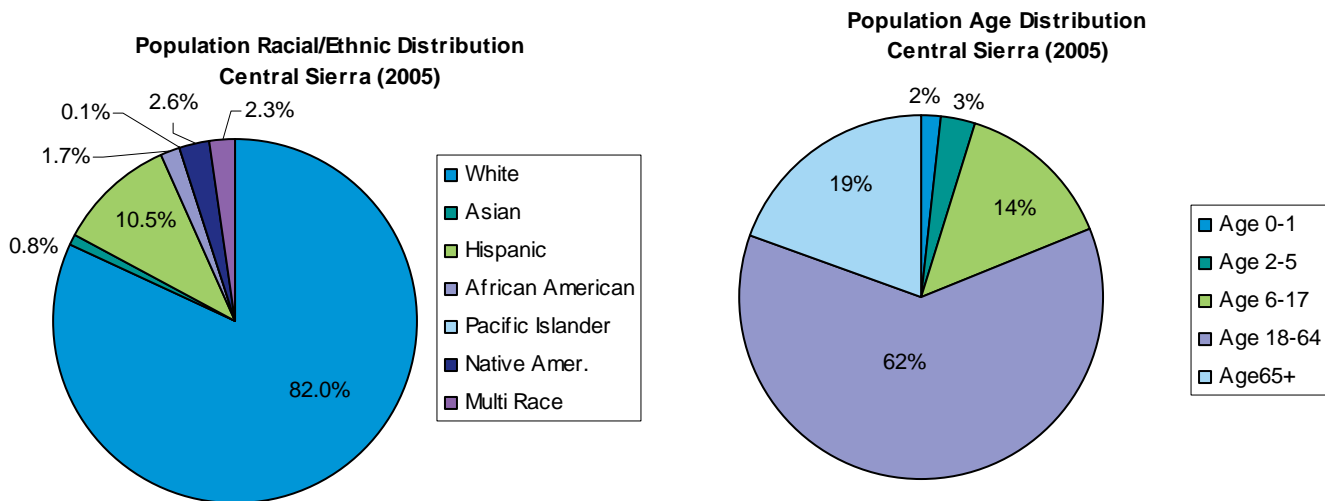
CENTRAL SIERRA REGIONAL SUMMARY

The Central Sierra region includes the following counties: Alpine, Amador, Calaveras, Inyo, Mariposa, Mono, and Tuolumne. In 2005 there were 80 active registered dental hygienists (RDHs) in this region.

- In 2005, the small population in the Central Sierra region was economically less well off and much less diverse than the population statewide.
- The Central Sierra has a lower than average supply of dentists combined with a higher than average supply of hygienists resulting in a greater number of RDHs per dentist in the region than statewide.
- The RDH population in the region is growing more quickly than the general population and the dentist population (which is declining). Since there is no education program in the region, there are no new graduates from which to project incoming supply. Migration to the Central Sierra from other California regions and from out-of-state is the source of incoming RDHs, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are average, benefits are mixed, there are higher rates of part-time RDH vacancies, a similar perception of the supply of RDHs, a greater percent of RDHs looking for work, and there is much greater difficulty finding work, with a wide range of difficulties reported.
- The workforce in the region is less diverse and less highly educated than the RDH workforce statewide. A much greater percent of RDHs in the region are working in non-traditional settings than seen statewide.
- Overall, indicators show a struggling labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

Demand for Dental Hygienists in the Central Sierra

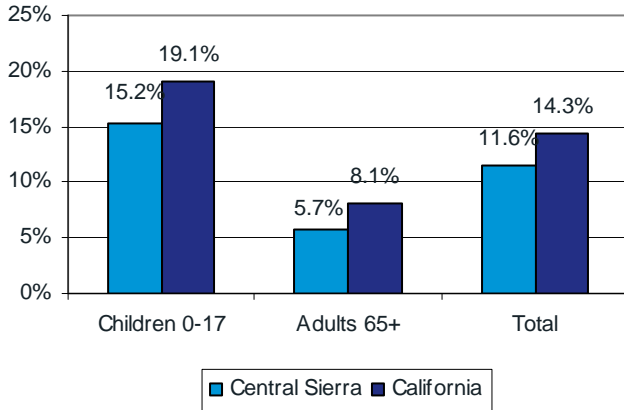
The demand for RDHs in the Central Sierra is driven by dental offices' response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. The Central Sierra has lower than average poverty rates but also lower than average income compared with the state as a whole, and hence a lower capacity to pay for care. In 2005, the population of the Central Sierra was 192,968 – only 0.5% of the total population of the State. Compared with California as a whole, the general population in the Central Sierra is much less racially/ethnically diverse.



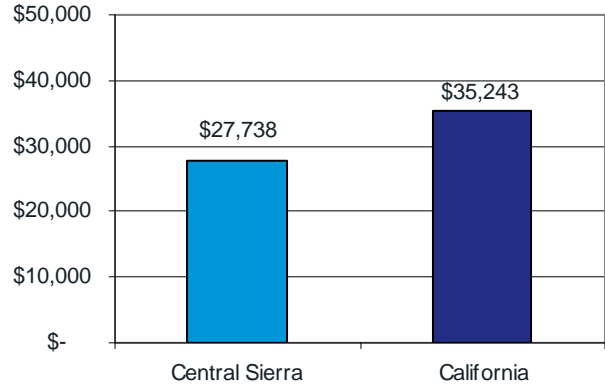
The general population of the Central Sierra is growing more slowly than the state as a whole, and the dentist population decreased by 1.3% between 2002 and 2005. The RDH population in the Central Sierra however is growing at almost double the rate of the RDH population in California as a whole. Hence, the

supply of RDHs is growing relative to overall population growth and to the supply of dentists. There is a lower than average supply of dentists in the region, (51.2/100,000 population) resulting from the fact that 0.4% of California's general practice dentists live in this region, compared with 0.5% of California's population.

**Percent of Population in Poverty
Central Sierra (2005)**

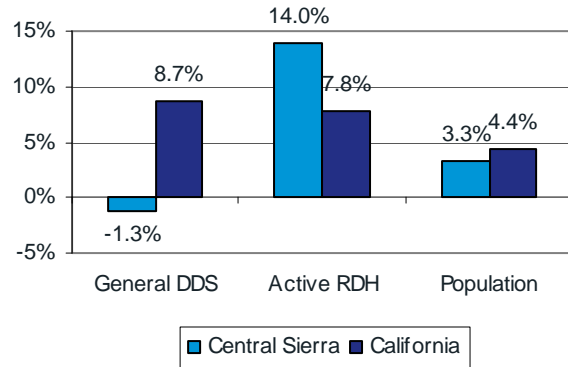


**Per Capita Income
Central Sierra (2005)**

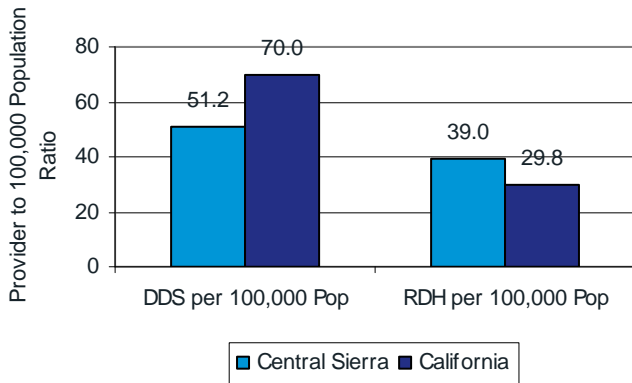


The Central Sierra's RDH population increased 14.0% in the past three years and the Central Sierra still has a greater share (0.7%) of the State's RDH population than total population, resulting in a ratio of 39.0 RDH per 100,000 population. The Central Sierra has 0.76 hygienists per dentist, significantly greater than the statewide average of 0.43. There are a greater number of reported RDH part-time vacancies in Central Sierra dental practices where RDHs are currently employed than reported statewide, but no full-time vacancies. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

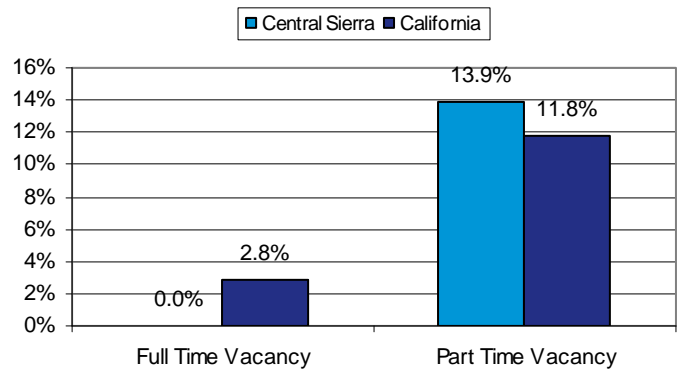
Percent Increase of General DDS, Active RDH and Population, Central Sierra (2002-2005)



**Dentists and Hygienists per 100,000 Population
Central Sierra (2005)**



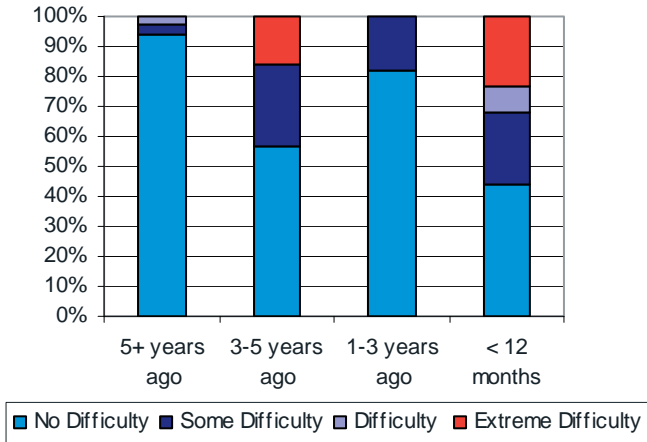
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



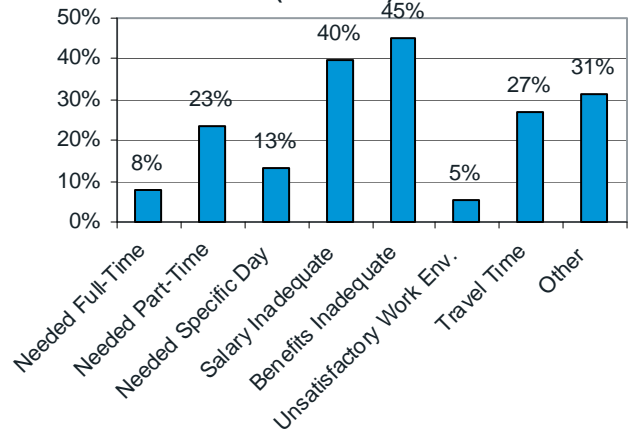
Between 2000 and 2005 the dental hygiene labor market in the Central Sierra experienced a similar contraction as was noted statewide. In 2005, 10.5% of Central Sierra RDHs reported they were actively looking for work and on average RDHs were looking for 17.4 additional hours of work.

The difficulty level finding employment encountered in the Central Sierra has increased in recent years, with 56% of hygienists looking for work in the past 12 months reporting *some* to *extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, 45% reported inadequate benefits and 40% reported inadequate salary as the type of difficulty encountered. Central Sierra RDHs report a mixed perception of supply of RDHs, with 66.9% reporting an adequate supply, 11.8% reporting too many, and 21.3% reporting not enough.

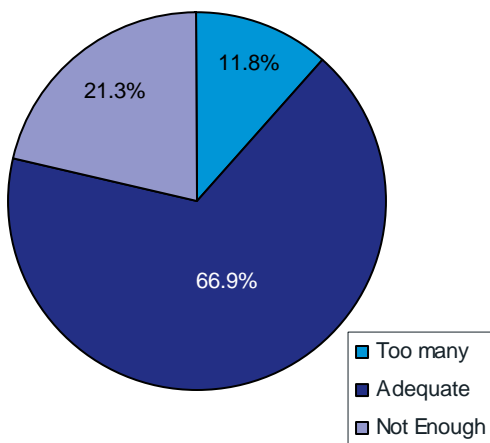
**Clinical RDH's Level of Difficulty Finding Employment When Last Sought
Central Sierra (2005-2006)**



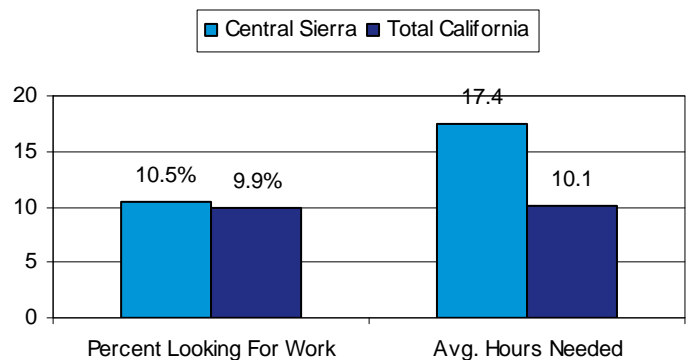
**Type of Difficulty Encountered Finding Employment in the Last 12 Months
Central Sierra Clinical RDHs (2005-2006)**



Clinical RDHs Opinion of Local Community Supply of RDHs: Central Sierra (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



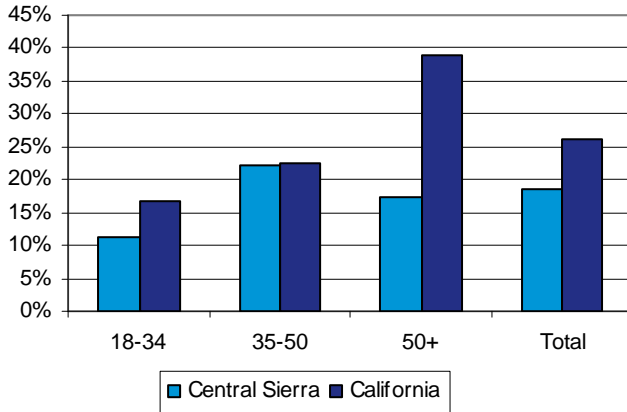
The Supply of Dental Hygienists in the Central Sierra

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

Inflow of Hygienists

The Central Sierra has no dental hygiene programs, but is flanked by the San Joaquin Valley and Greater Sacramento regions which together have seven programs and produce 35% of the statewide graduates annually. The two areas are likely to be the feeders for the Central Sierra region; however specific data on the patterns of new graduates from other regions entering or returning to the Central Sierra are not available.

Percent of Active RDHs Educated Out-Of-State by Age, Central Sierra and California (2005-2006)

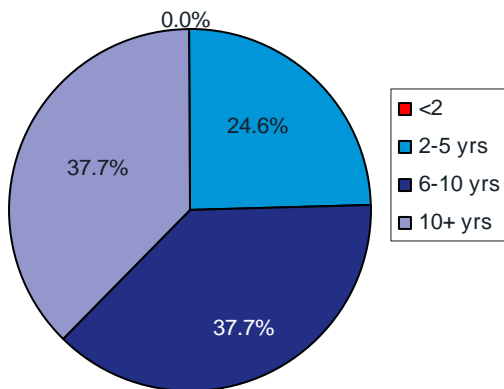


Data on location of first licensure and location of education provide insight into inter-state migration. In the Central Sierra, 18.5% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 14.7% of practicing RDHs in the Central Sierra were first licensed out-of-state, compared to 22.6% statewide. The Central Sierra tends to have a much lower proportion of out-of-state educated RDHs compared to California overall, particularly in the older and younger cohorts.

Outflow of Hygienists

No Central Sierra RDHs reported they plan to leave the workforce in the next 2 years, although 24.5% noted they were expecting to leave in 2-5 years (20 individuals), and another 37.7% expect to leave within 10 years, (30 individuals). The proportion of actively licensed RDHs in the Central Sierra who are currently not working is higher than the statewide average (20.7% vs. 16.6%). Inactive RDHs in this region did not report reasons for being inactive, although 33.2% noted they had an intention to return to the workforce in the future.

Clinical RDHs Reported Years Left in Practice Central Sierra (2005-2006)



Just 2.4% of RDHs in the Central Sierra are enrolled in an education program. All in this small group are enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. Just under one-fifth of RDHs in the Central Sierra suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

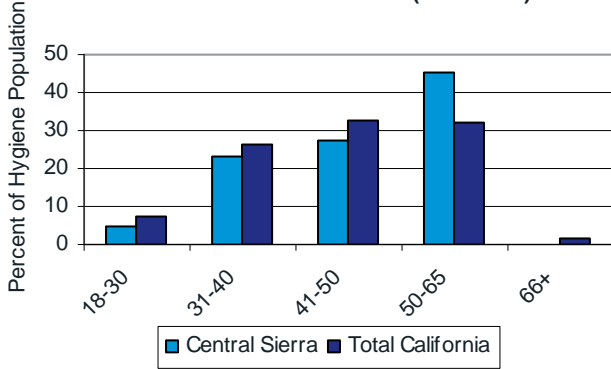
Central Sierra Dental Hygiene Labor Market

Demographics & Educational Level

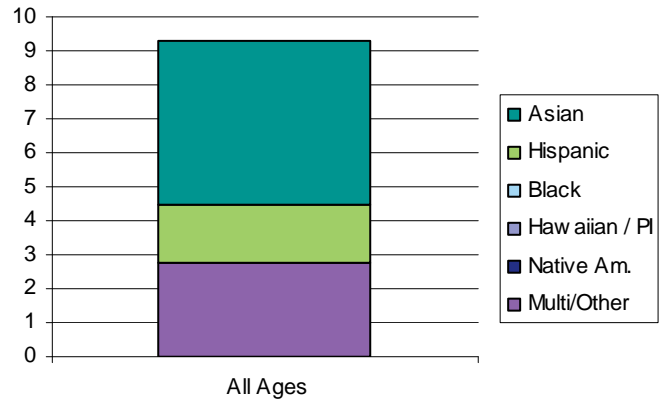
The average age of a RDH in the Central Sierra is 46.9 years, slightly older than the statewide average age of 44.7 years. A large proportion of active RDHs (46.9%) are in the 50-65 year old age category. The marital status of Central Sierra RDHs generally mirrors the statewide distribution, with slightly more married RDHs both with and without children at home. The gender composition is still heavily female, with males constituting only 1.7% of RDHs in the Central Sierra. The RDH workforce in the Central Sierra is not

racially/ethnically diverse, as less than 10% RDHs in the Central Sierra are non-white, and only 17.2% report the ability to functionally communicate with their patients in a language other than English. A large percent (71.9%) of Central Sierra RDHs report an associate degree as the highest level earned in any field, while 26.4% report having earned a baccalaureate degree, and only 1.8% a masters degree or PhD.

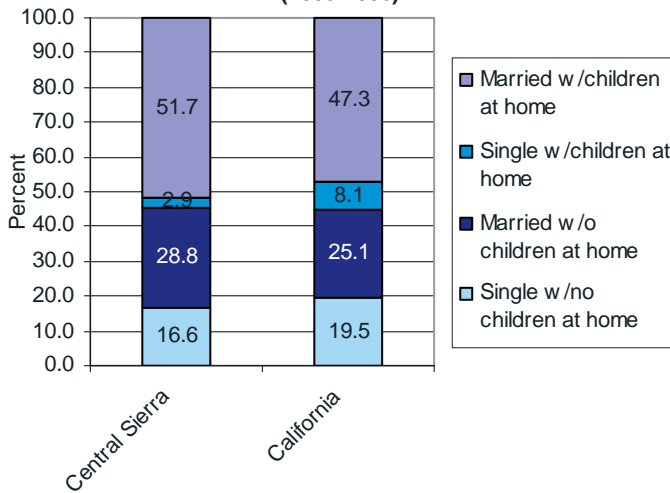
**Age Distribution of Active RDHs
Central Sierra and California (2005-2006)**



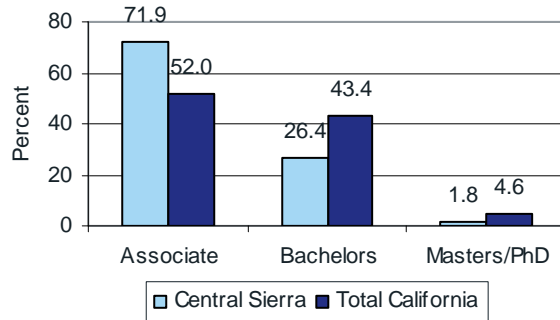
Racial/Ethnic Distribution of Non-White Active RDHs, Central Sierra (2005-2006)



**Marital Status and Family Responsibilities
Active RDHs, Central Sierra and California
(2005-2006)**

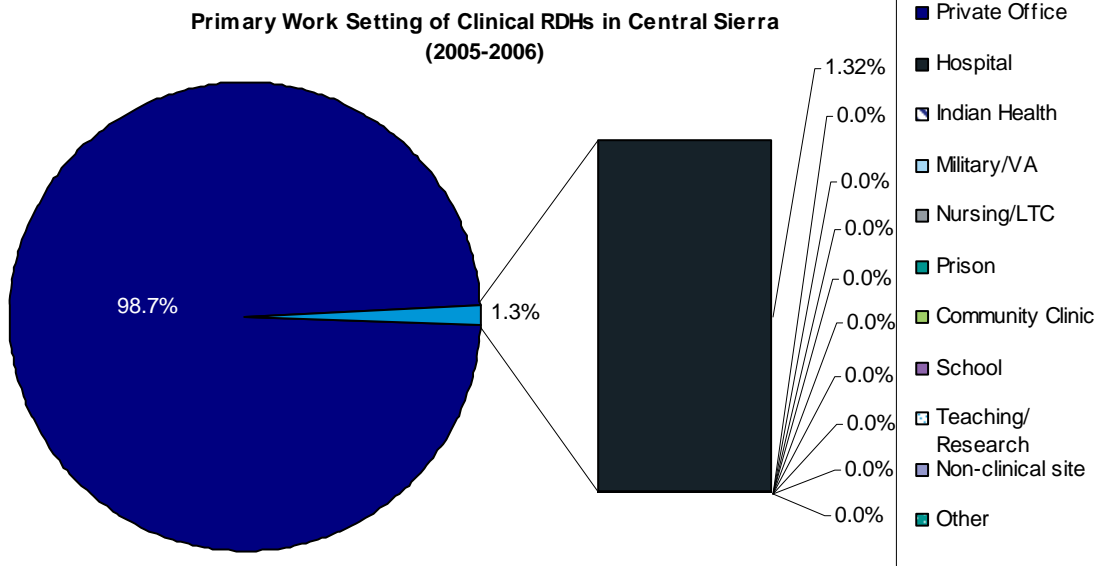


**Highest Degree Obtained In Any Field
Active RDHs, Central Sierra and California
(2005-2006)**

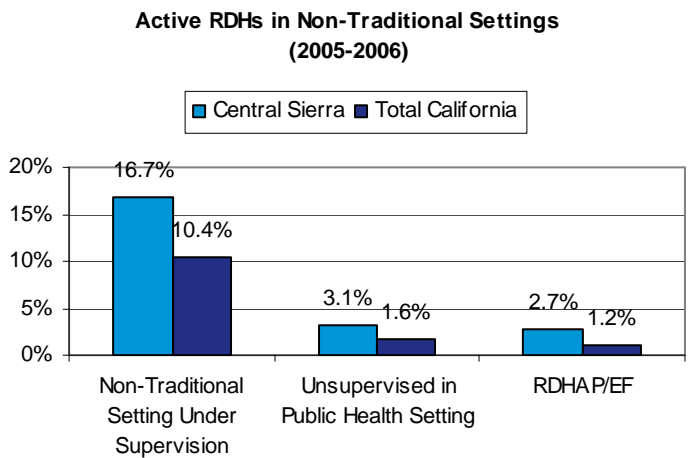
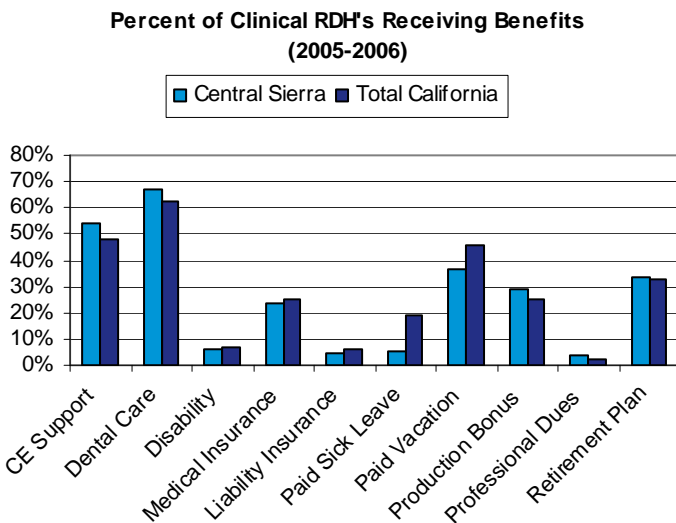


Practice Characteristics

On average, RDHs in the Central Sierra work 3.3 days per week, and 47.3 weeks per year, which mirrors statewide trends. Seventy-five percent of RDHs work in a single setting, 20% have two practice settings, and 6% have three or more settings. Central Sierra RDHs tend to stay with their practices for a long time, reporting an average of 9.0 years at their primary practice setting, and if they have them, 5.5 years at their secondary practice setting and 2.8 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research. The primary work setting of 98.7% of RDHs is a private dental office. The 1.3% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.



Central Sierra RDHs earn on average, \$45.66 per hour, with a standard deviation of \$11.00. This is \$0.02 more than the statewide average hourly wage. The minimum RDH hourly wage reported was \$34/hour and the maximum was \$80/hour. RDHs in the Central Sierra are more likely to receive some employment benefits (CE, Dental Care and Production Bonuses) and less likely to receive others (paid sick leave and vacation) than are RDHs statewide.



The Central Sierra has greater than average RDHs working in non-traditional settings (outside a dental office or clinic) under supervision, unsupervised and in alternative practice. In 2005, the Central Sierra had 2.0% of the State's active RDHAPs, and none of the State's active RDHEFs, and 1.7% of RDHs in the Central Sierra are doing non-clinical work as their primary work activity. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in the Central Sierra faces multiple challenges. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

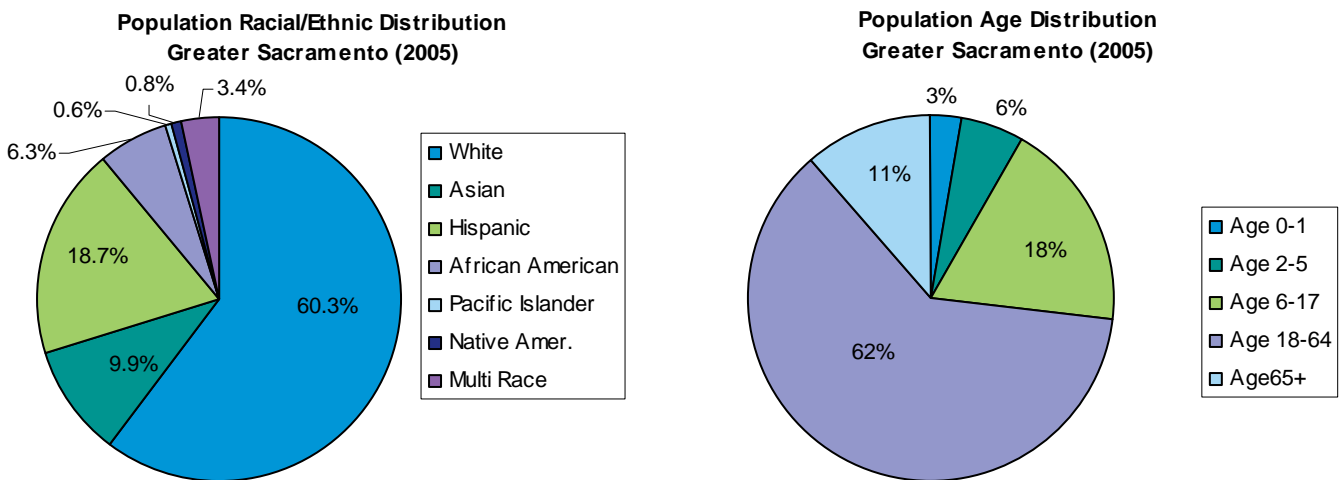
GREATER SACRAMENTO REGIONAL SUMMARY

The Greater Sacramento region includes the following counties: El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba. In 2005 there were 1000 active registered dental hygienists (RDHs) in this region.

- In 2005, the economic state of the population in the Greater Sacramento region was average and the population proportion was mid-sized and slightly less diverse compared to statewide population data.
- The Greater Sacramento has an average supply of dentists combined with a higher than average supply of hygienists, results in greater RDHs per dentist in the region than statewide.
- The RDH population in the region is growing more quickly than the general population and the dentist population. In the short term new graduates in the region are projected to outpace expected retirements/exits from the workforce. Migration to and from other regions may mitigate this somewhat, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are lower (although benefits seem to be more prevalent), there are more RDH vacancies, a smaller perception of not enough RDHs, fewer RDHs looking for work, and there is the same difficulty overall finding work, with a wide range of difficulties reported.
- The workforce in the region is less diverse and less educated than the RDH workforce statewide. A similar percent of RDHs in the region are working in non-traditional settings than seen statewide.
- Overall, show an average labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

Demand for Dental Hygienists in Greater Sacramento

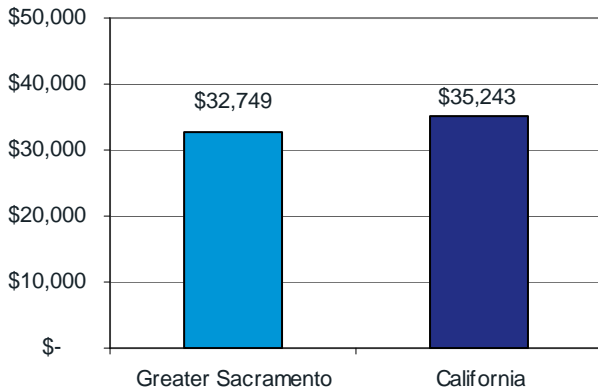
The demand for RDHs in the Greater Sacramento region is driven by dental offices' response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. Greater Sacramento has lower than average poverty rates and average income compared with the state as a whole, and hence a good capacity to pay for care. In 2005, the population of Greater Sacramento was 2,214,397 – 6.0% of the total population of the State. Compared with California as a whole, the general population in Greater Sacramento is less racially and ethnically diverse, but has a similar age distribution.



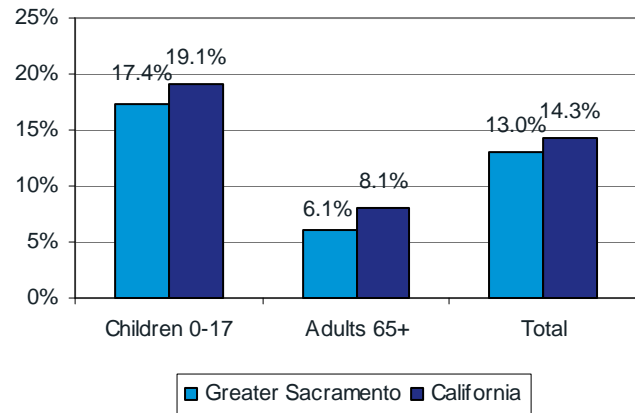
The general population, dentist population and RDH population in Greater Sacramento are growing more rapidly in comparison to California as a whole. The supply of RDHs is growing at triple the rate of overall population growth, and is outpacing the supply of dentists. There is an average supply of dentists in the

region, (69.5/100,000 population) resulting from the fact that 5.9% of California's general practice dentists live in this region, compared with 6.0% of California's population.

**Per Capita Income
Greater Sacramento (2005)**

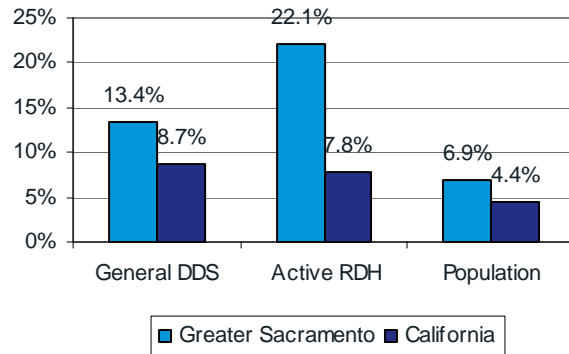


**Percent of Population in Poverty
Greater Sacramento (2005)**

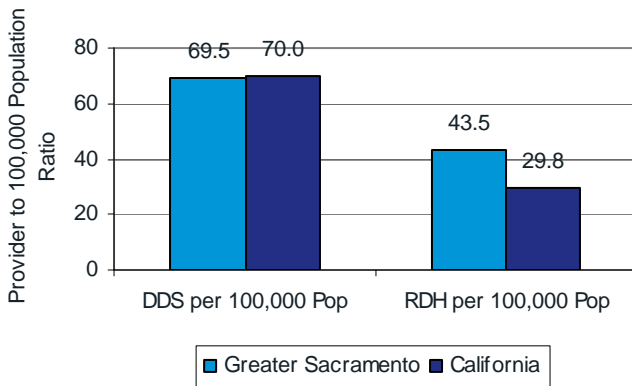


Greater Sacramento's RDH population increased 22.1% in the past three years. The region has a greater share (8.7%) of the State's RDH population than total population, resulting in a ratio of 43.5 RDH per 100,000 population. Greater Sacramento has 0.63 hygienists per dentist, greater than the statewide average of 0.43. There are a greater number of reported RDH vacancies in Greater Sacramento dental practices where RDHs are currently employed than are reported statewide. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

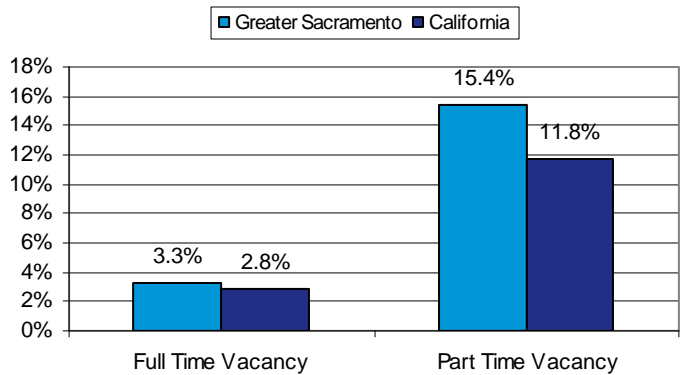
Percent Increase of General DDS, Active RDH and Population, Greater Sacramento (2002-2005)



**Dentists and Hygienists per 100,000 Population
Greater Sacramento (2005)**



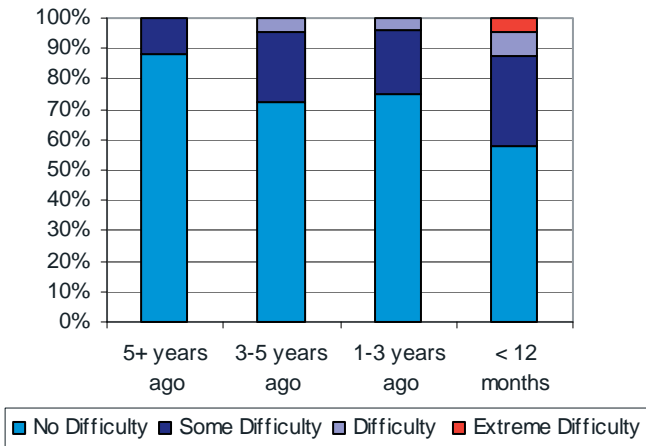
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



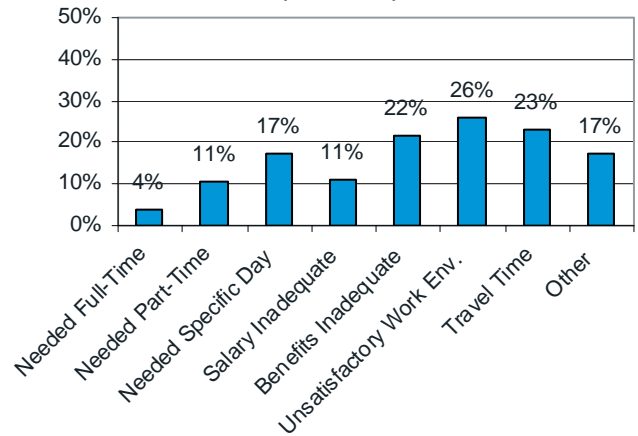
Between 2000 and 2005 the dental hygiene labor market in Greater Sacramento experienced a similar contraction as was noted statewide. In 2005, 7.2% of Greater Sacramento RDHs reported they were actively looking for work and, on average, RDHs were looking for 10.2 additional hours of work.

The level of difficulty finding RDH employment in the Greater Sacramento has increased in recent years, with 42% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, unsatisfactory work environments were reported by 26% of the respondents, with travel time and benefit problems reported by 23% and 22% respectively. Greater Sacramento RDHs report a mixed perception of supply of RDHs in the Greater Sacramento, with 79.8% reporting an adequate supply, 7.1% reporting too many, and 13.1% reporting not enough. Greater Sacramento RDHs are less likely to report a perception of “too many” RDHs or “not enough” RDHs than RDHs statewide.

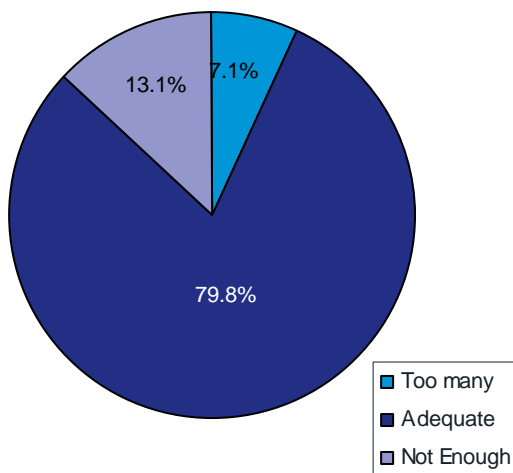
Clinical RDH's Level of Difficulty Finding Employment When Last Sought Greater Sacramento (2005-2006)



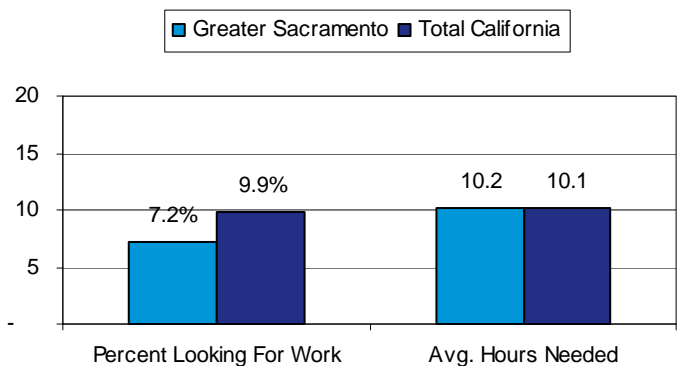
Type of Difficulty Encountered Finding Employment in the Last 12 Months Greater Sacramento Clinical RDHs (2005-2006)



Clinical RDHs Opinion of Local Community Supply of RDHs: Greater Sacramento (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



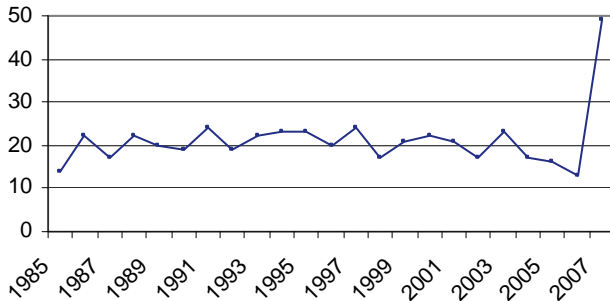
The Supply of Dental Hygienists in Greater Sacramento

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

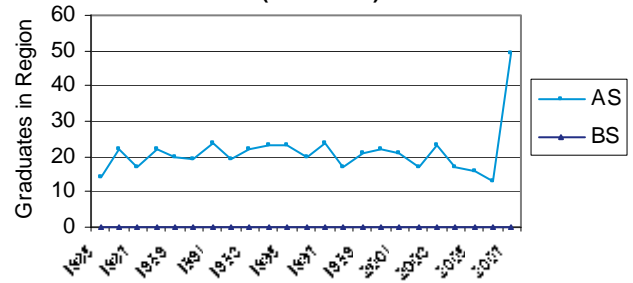
Inflow of Hygienists

Greater Sacramento has two dental hygiene programs: Sacramento City College and Western Career College-Sacramento (graduated first cohort in 2007). In 2007, Greater Sacramento produced 9.4% of all statewide graduates. Greater Sacramento does not produce any baccalaureate RDHs. The 2007 increase in the number of graduates in region and increase in associate degree graduates is due to Western Career College-Sacramento graduating its first class. The RDH workforce is becoming increasingly diverse, although in 2007 only 24% of the graduates were non-white, down from 32% in 2001. Only 2% of the graduates in the Greater Sacramento are men, compared to 7% statewide.

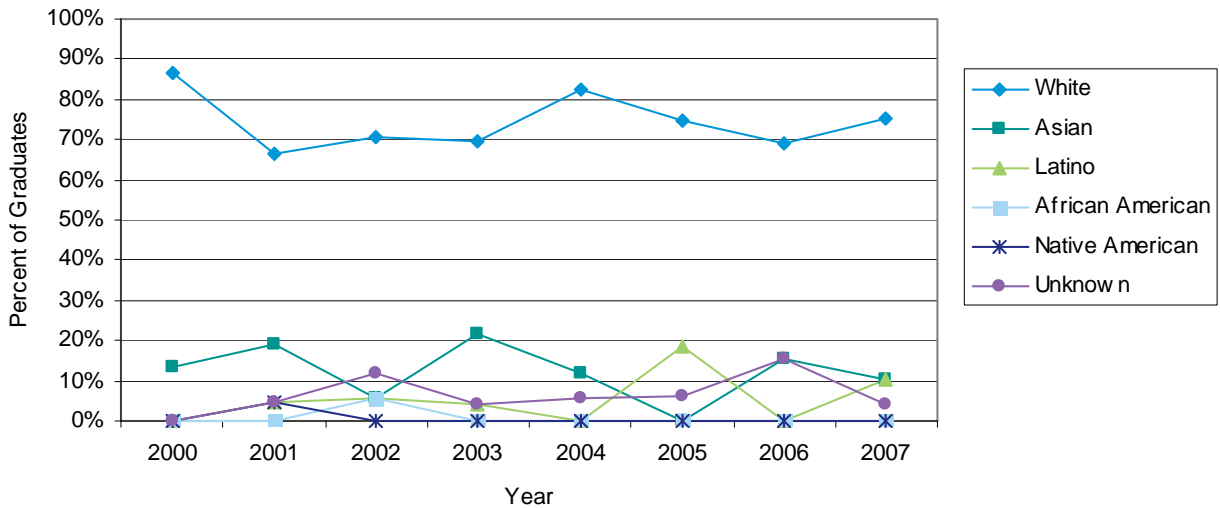
Dental Hygiene Graduates from Greater Sacramento Programs (1985-2007)



Trends in Degree Type Awarded Greater Sacramento Dental Hygiene Programs (1985-2007)



Racial Distribution of Dental Hygiene Graduates from Greater Sacramento Programs (2000-2007)



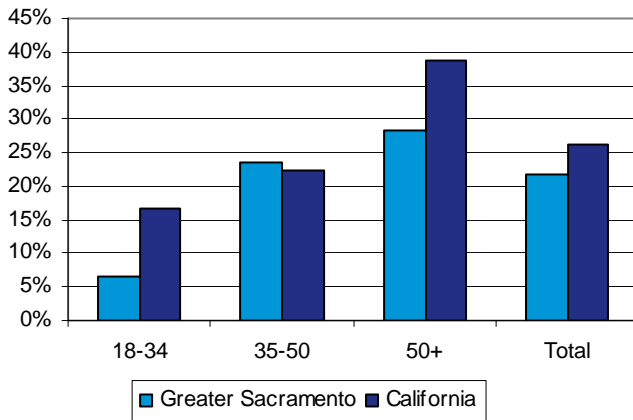
Another source of labor market supply is migration. In Greater Sacramento, 21.7% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 21.9% of practicing RDHs in Greater Sacramento were first licensed out-of-state, compared to 22.6% statewide. Younger RDHs are less likely to be educated out-of-state than older RDHs, however Greater Sacramento tends to have a lower proportion of out-of-state educated RDHs compared to California overall.

Outflow of Hygienists

A number of Greater Sacramento RDHs (2.4%) report they plan to leave the workforce in the next 2 years (about 20 individuals), with an additional 16.3% expected to leave in 2-5 years (163 individuals). There are currently 49 graduates annually in the region, if they all remain employed in Greater Sacramento over the five years there would be 245 entrants, with 183 exits, a slight increase overall. Projected out ten years, with existing graduates and an additional 31.4% of the current workforce exiting, the region would experience a decrease of 11 hygienists, a 1% drop from current supply.

The caveats to this projection are that an assumption of full retention is unlikely to hold, in and out migration is unaccounted for, and reported

Percent of Active RDHs Educated Out-Of-State by Age, Greater Sacramento and California (2005-2006)

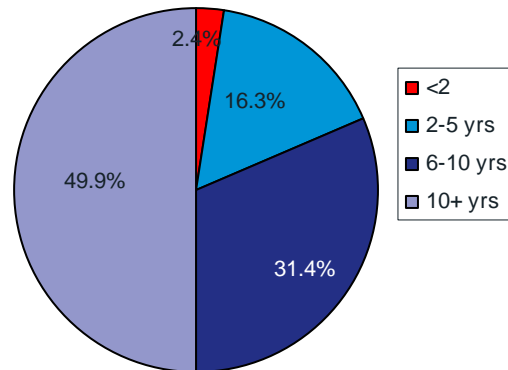


expectations of retirement may not translate into actual exits. Since this region is flanked by three regions without dental hygiene schools it is likely to have a number of graduates going to these other areas of the state.

The proportion of actively licensed RDHs in Greater Sacramento who are currently not working is higher than the statewide average (20.6% vs. 16.6%). The primary reasons reported for being out of the workforce were leaving for a career outside of dentistry (33.4%), retirement (18.0%) and job disability reasons (17.5%). Of the RDHs not currently working, 33.2% expect to return to work.

Just 2.2% of RDHs in Greater Sacramento are enrolled in an education program. However, the majority of this small group is enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. Just under one-tenth of RDHs in Greater Sacramento suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

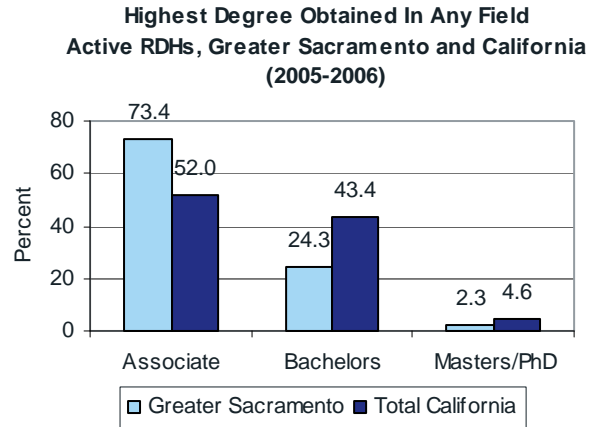
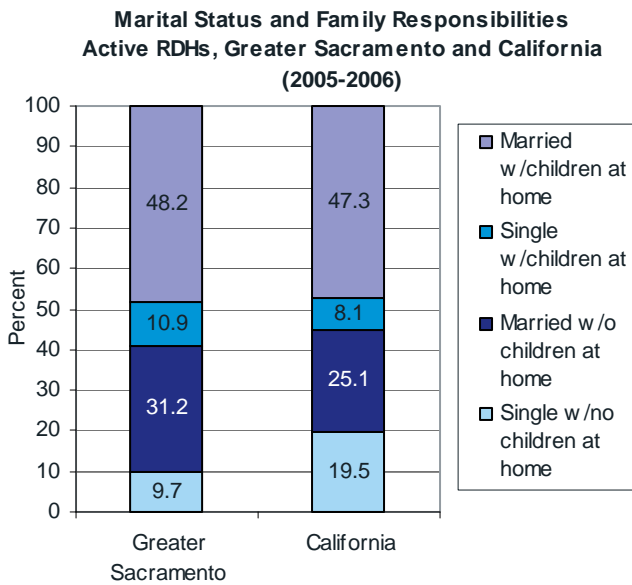
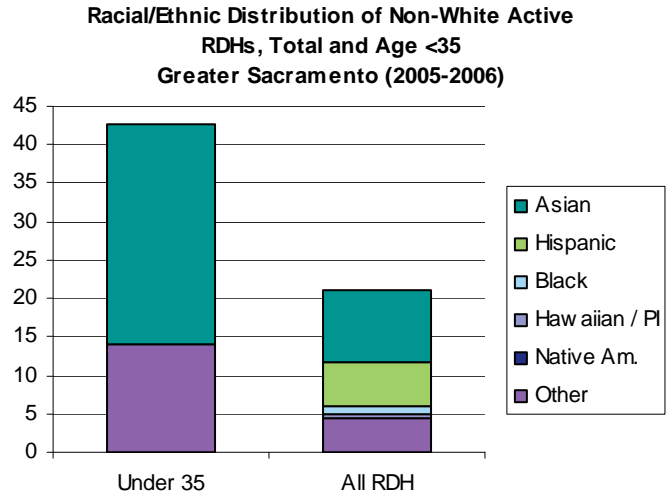
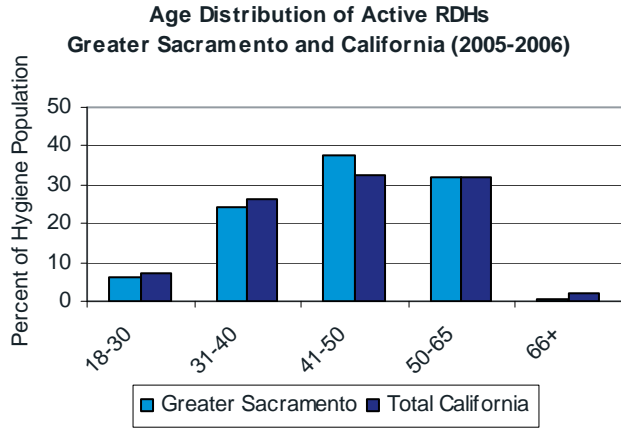
Clinical RDHs Reported Years Left in Practice Greater Sacramento (2005-2006)



Greater Sacramento Dental Hygiene Labor Market

Demographics & Educational Level

The average age of a RDH in Greater Sacramento is 44.8 years, similar to the statewide average age of 44.7 years. The marital status of Greater Sacramento RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 3.3% of RDHs in Greater Sacramento. The RDH workforce in the region is increasingly racially/ethnically diverse. Non-white minority groups represent 43% of RDHs under the age of 35, compared to just over one-fifth of all RDHs in the Greater Sacramento area. A smaller than statewide average proportion of RDHs in Greater Sacramento (17.6%) report the ability to functionally communicate with their patients in a language other than English.

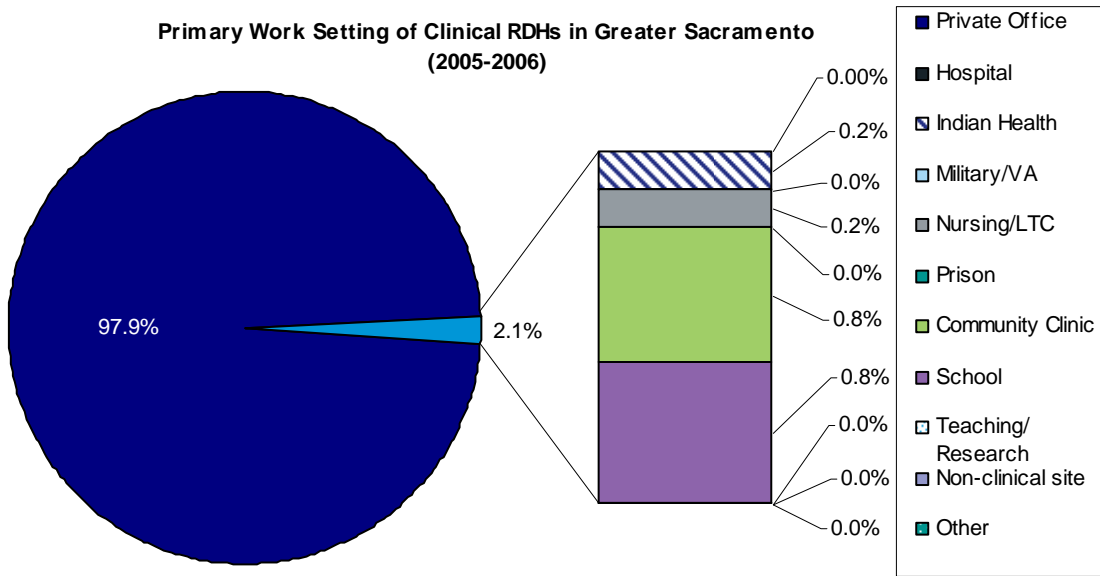


Three quarters of Greater Sacramento RDHs report an associate degree as the highest level earned in any field, while 24.3% report having earned a baccalaureate degree, and 2.3% a masters degree or PhD. Nationally, statewide and in Greater Sacramento RDH educational programs are increasingly offered at the associate degree level.

Practice Characteristics

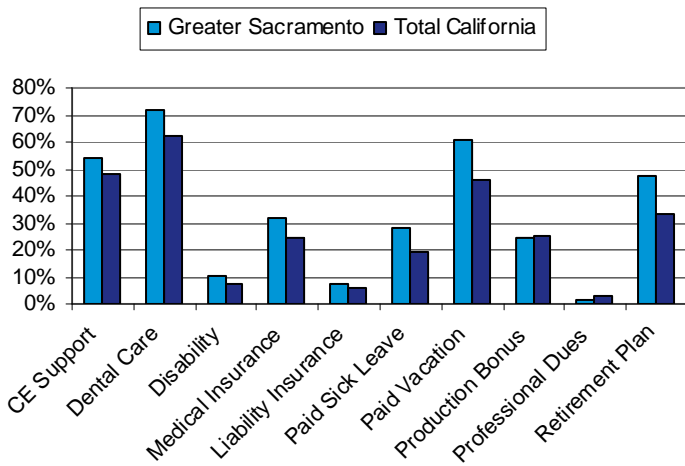
On average, RDHs in Greater Sacramento work 3.5 days per week, and 46.6 weeks per year, which mirrors statewide trends. Seventy-one percent work in a single setting, 24% have two practice settings, and 5% have three or more settings. Greater Sacramento RDHs tend to stay with their practices for a long time, reporting an average of 8.5 years at their primary practice setting, and if they have them, 4.1 years at their secondary practice setting and 4.1 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research. The primary work setting of 97.9% of RDHs is a private dental office. The 2.1% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.

Primary Work Setting of Clinical RDHs in Greater Sacramento (2005-2006)

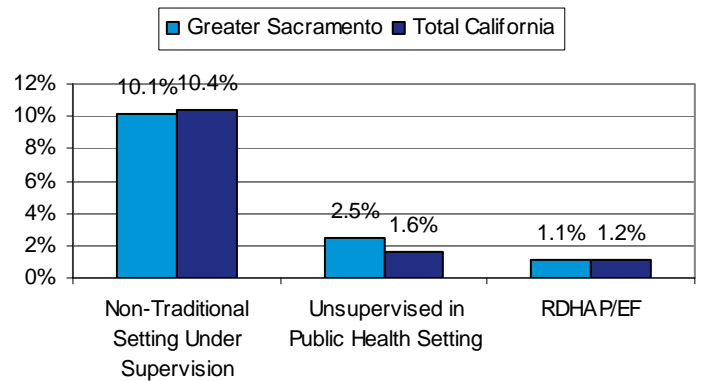


Greater Sacramento RDHs earn on average, \$44.21 per hour, with a standard deviation of \$9.25. This is \$1.43 less than the statewide average hourly wage. The minimum RDH hourly wage reported was \$35/hour and the maximum was \$60/hour. RDHs in the Greater Sacramento region also are more likely to receive a number of employment benefits than are RDHs statewide.

Percent of Clinical RDH's Receiving Benefits (2005-2006)



Active RDHs in Non-Traditional Settings (2005-2006)



Greater Sacramento has an average number of RDHs working in non-traditional settings (outside a dental office or clinic), under supervision and as an RDHAP or EF, and a slightly greater proportion working unsupervised in a public health setting. Only 2.0% of RDHs in Greater Sacramento are doing non-clinical work as their primary work activity. In 2005, Greater Sacramento had 7.9% of the State's active RDHAPs, and 9.5% of the State's active RDHEFs, yet the advanced licensees were still a small proportion of the overall hygiene workforce. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in Greater Sacramento is about average. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

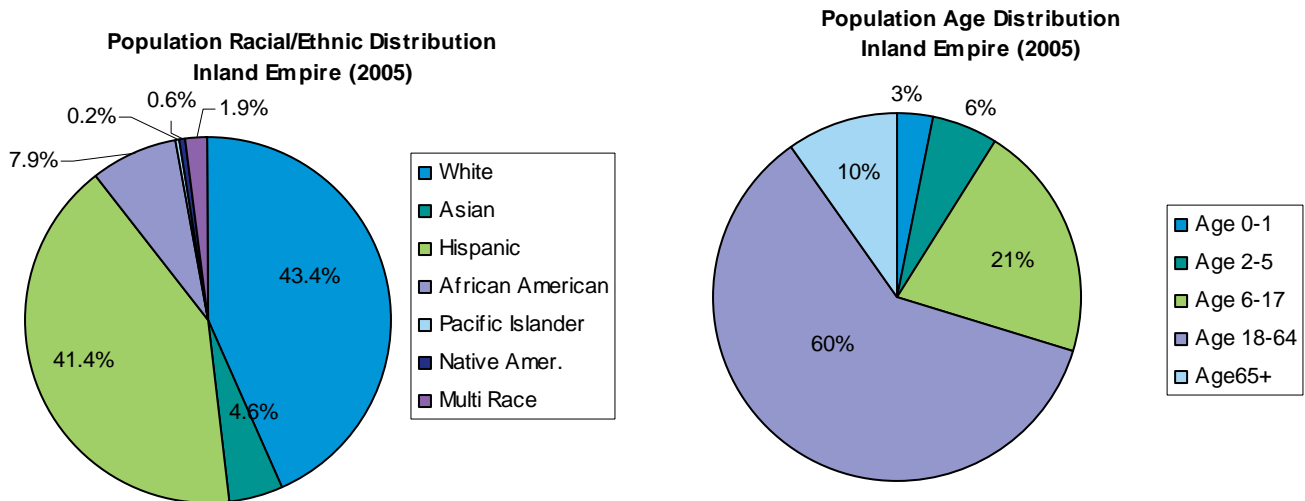
INLAND EMPIRE REGIONAL SUMMARY

The Inland Empire includes Riverside and San Bernardino counties. In 2005 there were 813 active registered dental hygienists (RDHs) in this region.

- In 2005, the fast growing population in the Inland Empire region was less economically well-off than populations statewide. The population is very diverse and slightly younger compared to statewide population data.
- The Inland Empire has a lower than average supply of dentists combined with a lower than average supply of hygienists, results in an equal ratio of RDHs per dentist in the region as exists statewide.
- The RDH population in the region is growing more quickly than the general population and the dentist population. New graduates in the region are projected to outpace expected retirements/exits from the workforce over the next decade. Migration to and from other regions may mitigate this somewhat, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are lower and benefits are less prevalent, there are more full-time RDH vacancies, an equal perception of “not enough” RDHs, an equal percent RDHs looking for work, and there is the more difficulty finding work, with a wide range of difficulties reported, particularly travel time.
- The workforce in the region is less diverse and more educated than the RDH workforce statewide. A slightly greater percent of RDHs in the region are working in non-traditional settings than seen statewide.
- Overall, the labor market indicators show a mixed labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

Demand for Dental Hygienists in the Inland Empire

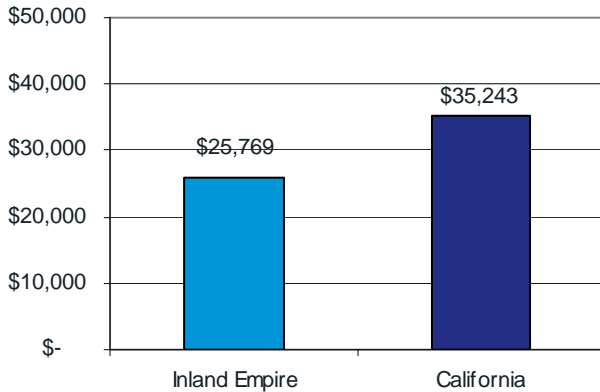
The demand for RDHs in the Inland Empire is driven by dental offices’ response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. The Inland Empire has average poverty rates and lower than average income compared with the state as a whole, and hence a lower capacity to pay for dental care. In 2005, the population of the Inland Empire was 3,897,850 – 10.5% of the total population of the State. Compared with California as a whole, the general population in the Inland Empire is equally racially and ethnically diverse, and slightly younger.



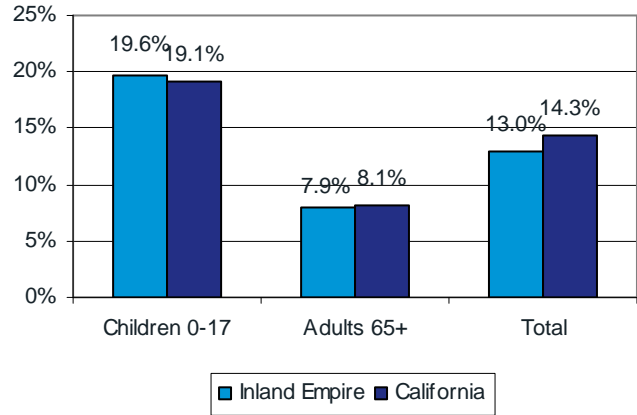
The general population, dentist population and RDH population in the Inland Empire are growing more rapidly in comparison with California as a whole. The supply of RDHs is growing at a greater rate than the

overall population, and outpacing the supply of dentists as well. There is a lower than average supply of dentists in the region, (46.5/100,000 population) resulting from the fact that only 7.0% of California's general practice dentists live in this region, compared with 10.5% of California's population.

**Per Capita Income
Inland Empire (2005)**

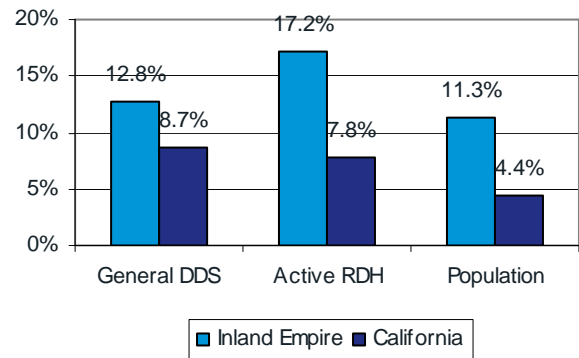


**Percent of Population in Poverty
Inland Empire (2005)**

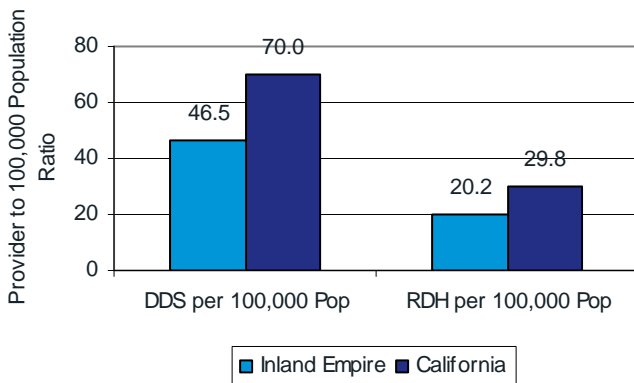


The Inland Empire's RDH population increased 17.2% in the past three years. The Inland Empire region has an equal share (7.1%) of the State's RDH population than total population, resulting in a ratio of 20.2 RDH per 100,000 population. The Inland Empire has 0.43 hygienists per dentist, identical to the statewide average of 0.43. There are a greater number of full-time reported RDH vacancies in Inland Empire dental practices where RDHs are currently employed than are reported statewide, and about an average number of part-time vacancies. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

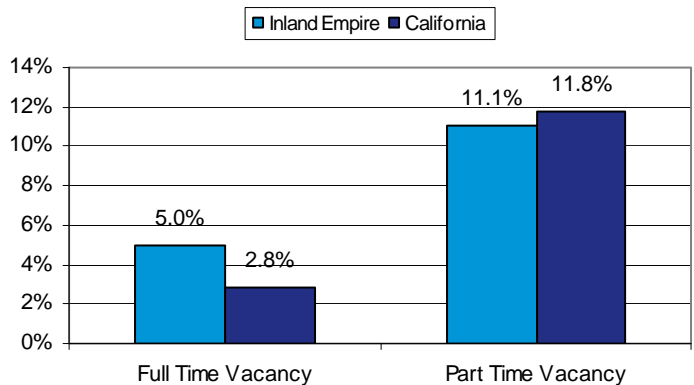
**Percent Increase of General DDS, Active RDH
and Population, Inland Empire (2002-2005)**



**Dentists and Hygienists per 100,000 Population
Inland Empire (2005)**



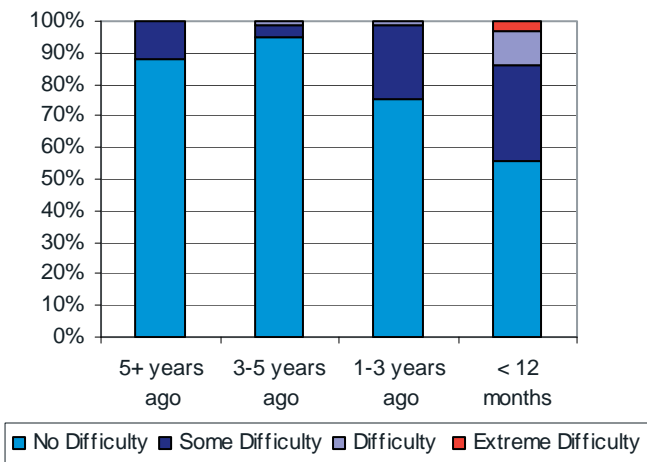
**Percent of Clinical RDH's Reporting One or More
RDH Vacancies in their Primary Practice
(2005-2006)**



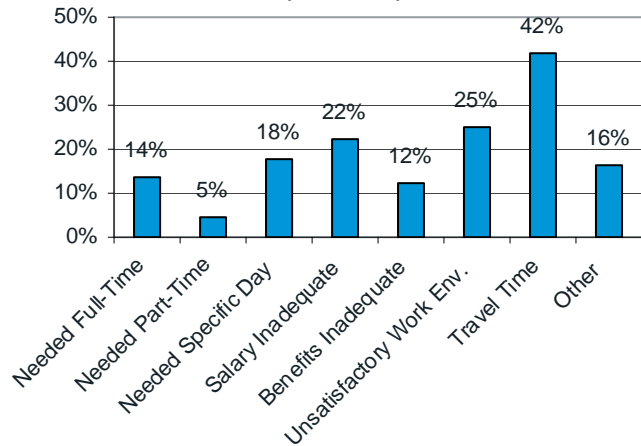
Between 2000 and 2005 the dental hygiene labor market in the Inland Empire experienced a similar contraction as was noted statewide. In 2005, 10.1% of Inland Empire RDHs reported they were actively looking for work and on average RDHs were looking for 10.3 additional hours of work.

The level of difficulty finding RDH employment in the Inland Empire has increased in recent years, with 43% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, travel time was reported by 42% as a difficulty encountered, while unsatisfactory work environments and inadequate salary difficulties were reported by 25% and 22% respectively. Inland Empire RDHs report a mixed perception of supply of RDHs in the Inland Empire, with 67.4% reporting an adequate supply, 12.4% reporting too many, and 20.2% reporting not enough. Inland Empire RDHs are just as likely to report a perception of “too many” RDHs as RDHs statewide.

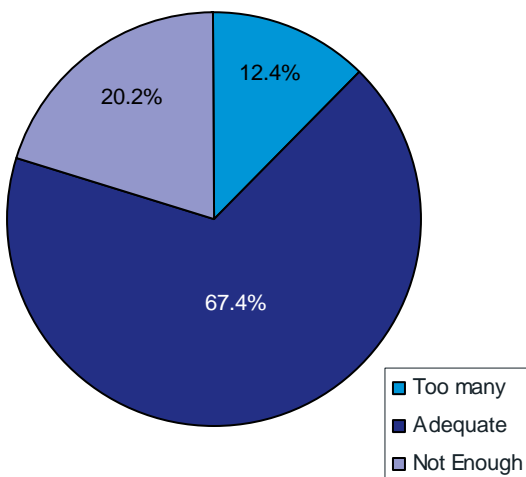
Clinical RDH's Level of Difficulty Finding Employment When Last Sought Inland Empire (2005-2006)



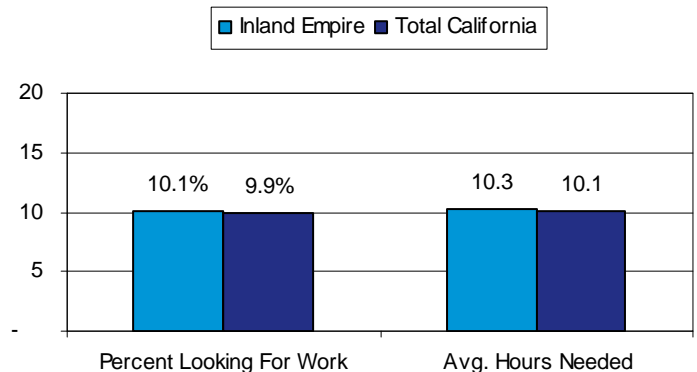
Type of Difficulty Encountered Finding Employment in the Last 12 Months Inland Empire Clinical RDHs (2005-2006)



Clinical RDHs Opinion of Local Community Supply of RDHs: Inland Empire (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



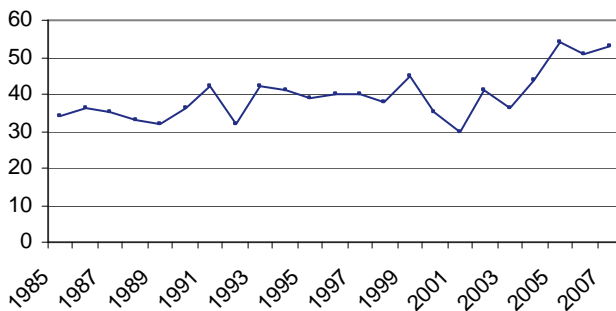
The Supply of Dental Hygienists in the Inland Empire

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

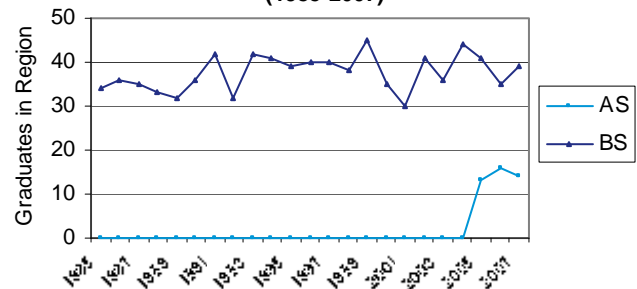
Inflow of Hygienists

The Inland Empire has two dental hygiene programs: Loma Linda University and Riverside Community College. In 2007, the Inland Empire produced 10.2% of all statewide graduates. The Inland Empire is one of three regions that produces baccalaureate educated RDHs. A recent increase in the number of graduates in region and addition of associate degree graduates is due to Riverside Community College graduating its first class in 2005. The Inland Empire RDH workforce is becoming increasingly diverse with 40% of graduates being non-white; numbers which have held steady the past seven years. Only 2% of the graduates in the Inland Empire are men, compared to 7% statewide.

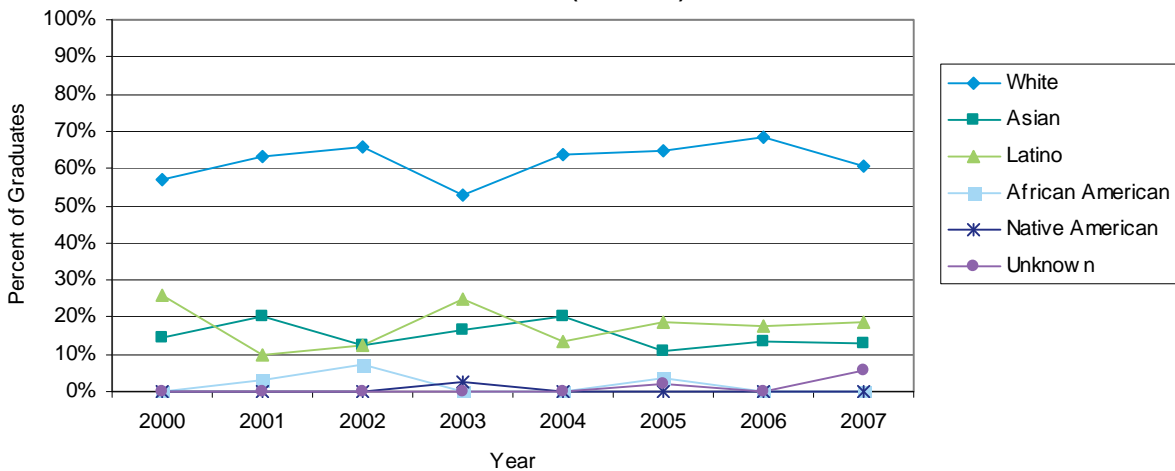
Dental Hygiene Graduates from Inland Empire Programs (1985-2007)



Trends in Degree Type Awarded Inland Empire Dental Hygiene Programs (1985-2007)

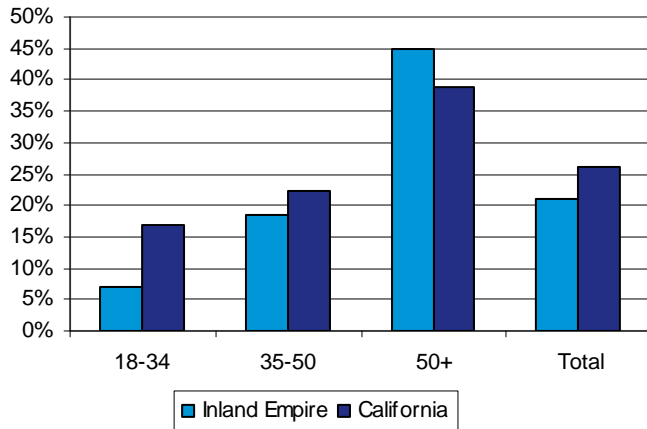


Racial Distribution of Dental Hygiene Graduates from Inland Empire Programs (2000-2007)



Another source of labor market supply is migration. In the Inland Empire, 21.7% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 21.9% of practicing RDHs in the Inland Empire were first licensed out-of-state, compared to 22.6% statewide. Younger RDHs are less likely to be educated out-of-state than older RDHs, however the Inland Empire tends to have a lower proportion of out-of-state educated RDHs compared to California overall.

Percent of Active RDHs Educated Out-Of-State by Age, Inland Empire and California (2005-2006)



Outflow of Hygienists

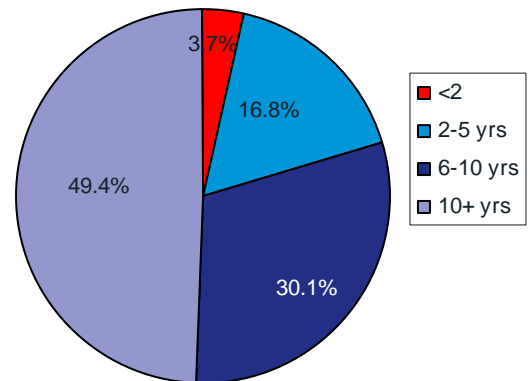
A number of Inland Empire RDHs (3.7%) report they plan to leave the workforce in the next 2 years (about 30 individuals), with an additional 16.8 expected to leave in 2-5 years (137 individuals). There are currently 53 graduates annually in the region, if they all remain employed in the Inland Empire over the five years there would be 265 entrants, with 167 exits, a slight increase overall. Projected out ten years, with existing graduates and an additional 30.1% of the current workforce exiting, the region would experience an increase of 119 hygienists, a 15% increase from current supply. The caveats to this projection are that an assumption of full retention is unlikely to hold, in and out migration is unaccounted for, and reported

expectations of retirement may not translate into actual exits.

The proportion of actively licensed RDHs in the Inland Empire who are currently not working is higher than the statewide average (19.4% vs. 16.6%). The primary reasons reported for being out of the workforce were family responsibilities (40.2%) and retirement (17.9%). Of the RDHs out of the workforce for family responsibilities, 52.0% reported they expected to return to the workforce. Of all RDHs not currently working, 31.6% expect to return to work.

Just 4.9% of RDHs in the Inland Empire are enrolled in an education program. Just under half of this small group is enrolled in an RDHAP program, while just over half is enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. Just under one-quarter of RDHs in the Inland Empire suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

Clinical RDHs Reported Years Left in Practice Inland Empire (2005-2006)



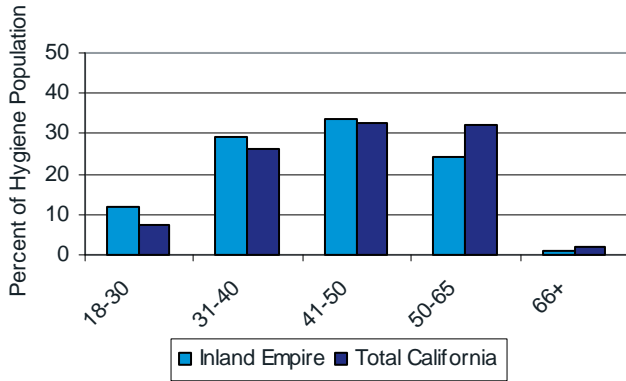
Inland Empire Dental Hygiene Labor Market

Demographics & Educational Level

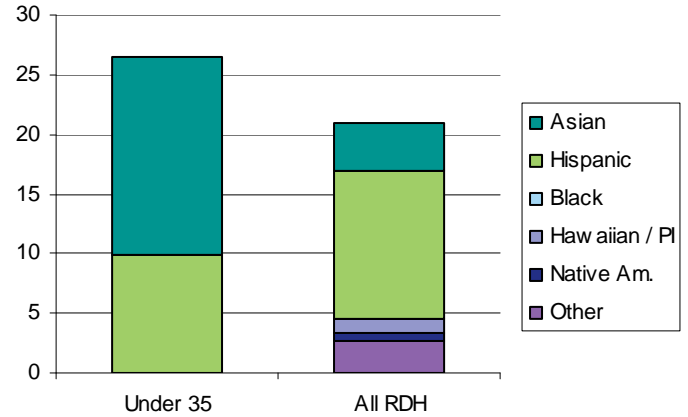
The average age of an RDH in the Inland Empire is 42.1 years, slightly younger than the statewide average age of 44.7 years. The marital status of Inland Empire RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 0.3% of RDHs in the region. The RDH workforce in the Inland Empire is increasingly racially/ethnically diverse. Non-white minority groups represent 27% of RDHs under the age of 35, compared to just over one-fifth of all RDHs in the Inland Empire. A smaller than statewide average proportion of RDHs in the Inland Empire (23.1%) report the ability to functionally communicate with their patients in a language other than English.

Consistent with having one of the three baccalaureate programs in the state, 63.7% report a baccalaureate degree as the highest degree earned in any field, while 33.2% of Inland Empire RDHs report an associate degree and 3.1% a masters degree or PhD. Nationally and statewide the trend is the same; RDH educational programs are increasingly offered at the associate degree level. The Inland Empire is unique in the number of graduates and practicing RDHs with a bachelor's degree, however the growth in graduates has been from associate degree programs.

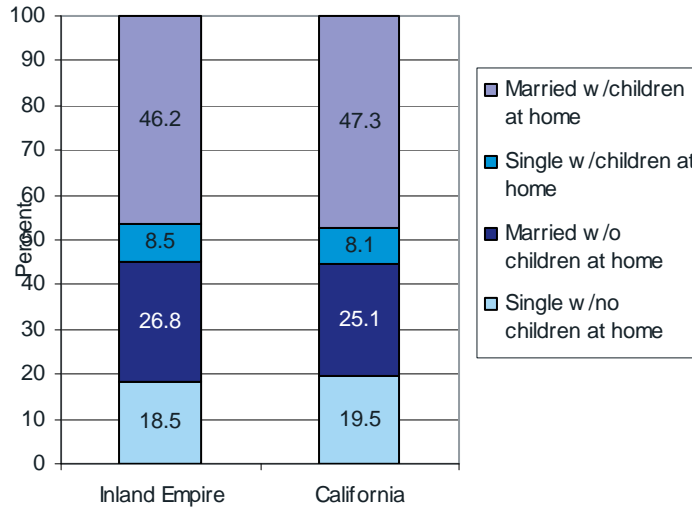
**Age Distribution of Active RDHs
Inland Empire and California (2005-2006)**



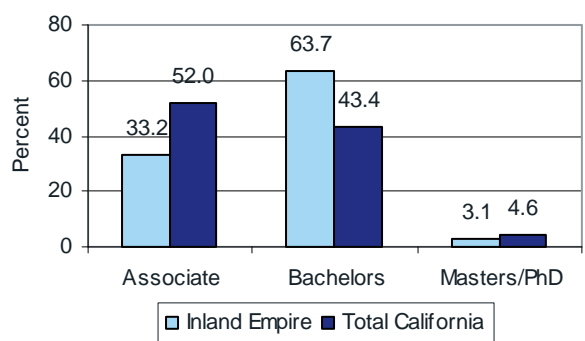
**Racial/Ethnic Distribution of Non-White Active RDHs, Total and Age <35
Inland Empire (2005-2006)**



**Marital Status and Family Responsibilities
Active RDHs, Inland Empire and California
(2005-2006)**

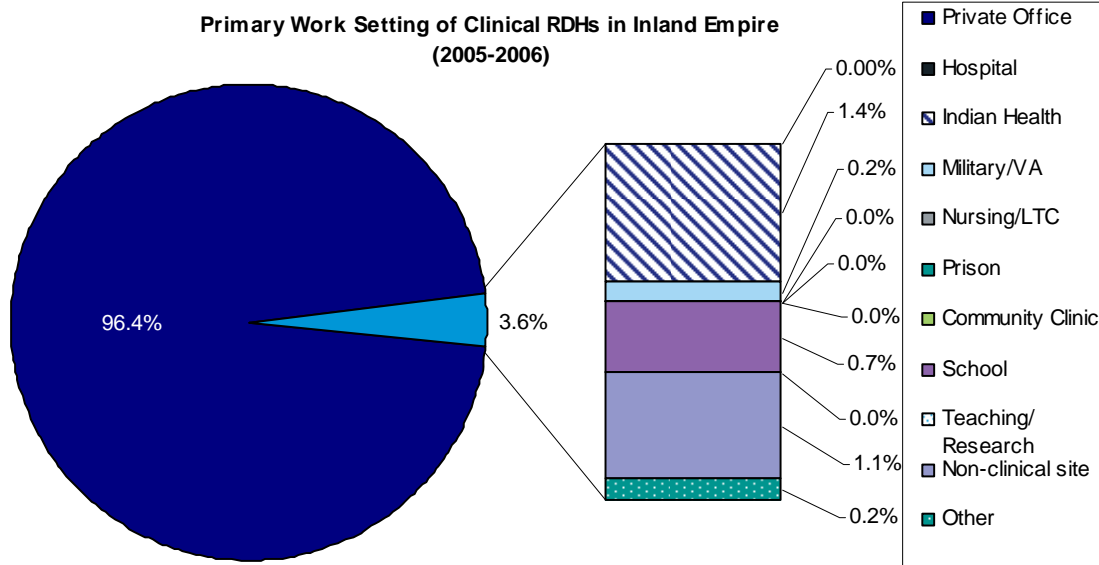


**Highest Degree Obtained In Any Field
Active RDHs, Inland Empire and California
(2005-2006)**

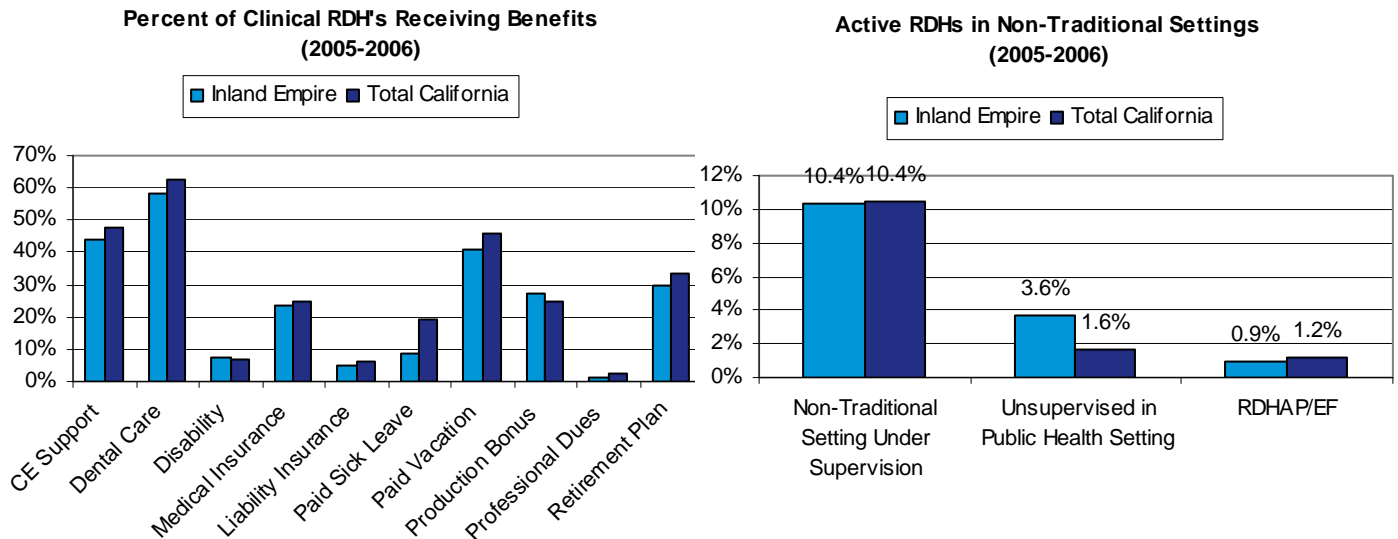


Practice Characteristics

On average, RDHs in the Inland Empire work 3.4 days per week, and 46.5 weeks per year, which mirrors statewide trends. Sixty-two percent work in a single setting, 33% have two practice settings, and 5% have three or more settings. Inland Empire RDHs tend to stay with their practices for a less time than RDHs in other regions, reporting an average of 7.4 years at their primary practice setting, and if they have them, 5.2 years at their secondary practice setting and 1.7 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research. The primary work setting of 96.4% of RDHs is a private dental office. The 3.6% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.



Inland Empire RDHs earn on average, \$42.40 per hour, with a standard deviation of \$13.61. This is \$3.24 less than the statewide average hourly wage. The minimum RDH hourly wage reported was \$18.75/hour and the maximum was \$69 per hour. RDHs in the Inland Empire also are less likely to receive a number of employment benefits than are RDHs statewide.



The Inland Empire has an average percent of regional RDHs working in non-traditional settings (outside a dental office or clinic) under supervision and as RDHAP/EFs, but a greater percent working unsupervised in public health settings. Only 0.9% of RDHs in the Inland Empire are doing non-clinical work as their primary work activity. The Inland Empire has 5.9% of the State's active RDHAPs, and 4.8% of the State's active RDHEFs, yet the RDHAP/EFs are still a small proportion of the overall hygiene workforce. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in the Inland Empire is mixed. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

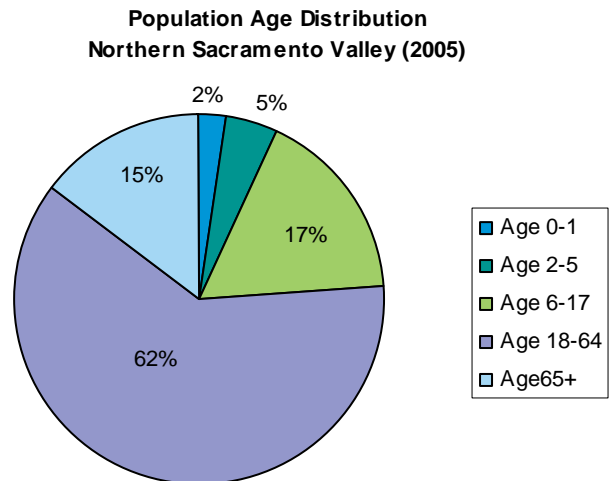
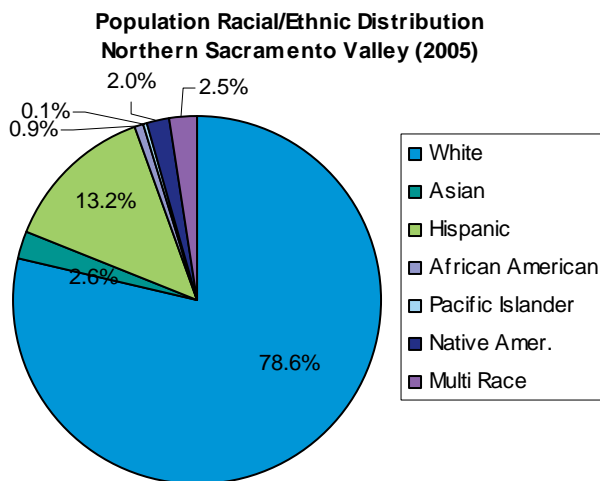
NORTHERN SACRAMENTO VALLEY REGIONAL SUMMARY

The Northern Sacramento Valley includes the following counties: Butte, Colusa, Glenn, Shasta, and Tehama. In 2005 there were 261 active registered dental hygienists (RDHs) in this region.

- In 2005, the population in the Northern Sacramento Valley region was much less economically well-off than populations statewide. The population is much less diverse and slightly older compared to statewide population data.
- The Northern Sacramento Valley has a lower than average supply of dentists combined with a higher than average supply of hygienists, resulting in the highest ratio of RDHs per dentist statewide.
- The RDH population in the region is growing much more quickly than the general population and the dentist population. In the short-term, new graduates in the region are projected to stay steady with expected retirements/exits from the workforce. Migration to and from other regions may mitigate this somewhat, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are lower and benefits are mixed, there are fewer RDH vacancies, a strong perception of “too many” RDHs, a greater percent of RDHs looking for work, and there is the more difficulty finding work, with a wide range of difficulties reported, particularly travel time.
- The workforce in the region is less diverse, older, and equally educated than the RDH workforce statewide. A slightly greater percent of RDHs in the region are working in non-traditional settings than seen statewide.
- Overall, the labor market indicators show a struggling labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

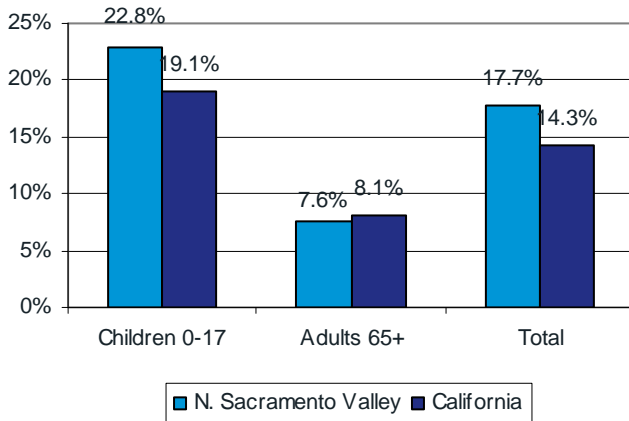
Demand for Dental Hygienists in the Northern Sacramento Valley

The demand for RDHs in the Northern Sacramento Valley is driven by dental offices’ response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. The Northern Sacramento Valley has higher than average poverty rates and lower than average income compared with the state as a whole, and hence a lower than average capacity to pay for dental care. In 2005, the population of the Northern Sacramento Valley was 505,631 – 1.4% of the total population of the State. Compared with California as a whole, the general population in the Northern Sacramento Valley is older and much less racially and ethnically diverse.

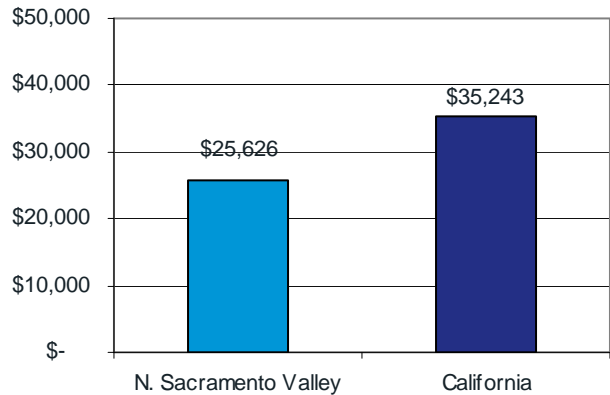


The general population and dentist population in the Northern Sacramento Valley are growing more slowly than California as a whole. The supply of RDHs however, is growing at a greater rate than the statewide RDH population, and is outpacing overall population and dentist growth in the region. There is a lower than average supply of dentists in the region, (51.9/100,000 population) resulting from the fact that only 1.0% of California's general practice dentists live in this region, compared with 1.4% of California's population.

**Percent of Population in Poverty
N. Sacramento Valley (2005)**

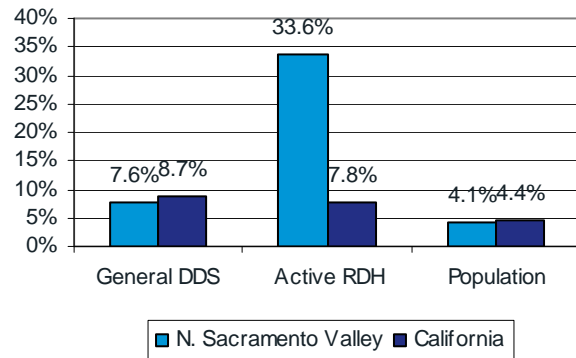


**Per Capita Income
N. Sacramento Valley (2005)**

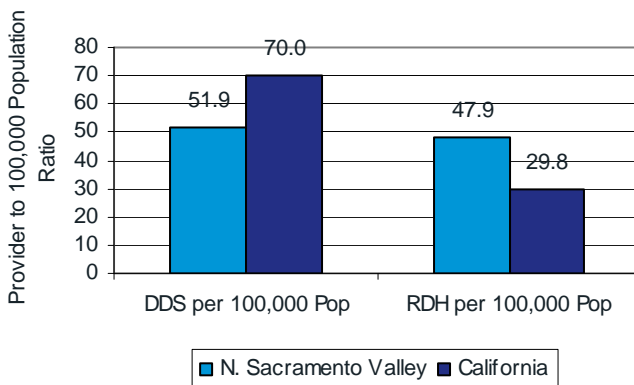


The Northern Sacramento Valley's RDH population increased 33.6% in the past three years. The Northern Sacramento Valley region has a greater share (2.2%) of the State's RDH population than total population, resulting in a ratio of 47.9 RDH per 100,00 population. The Northern Sacramento Valley has 0.92 hygienists per dentist, over double the statewide average of 0.43. There are fewer reported RDH vacancies in Northern Sacramento Valley dental practices where RDHs are currently employed than are reported statewide. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

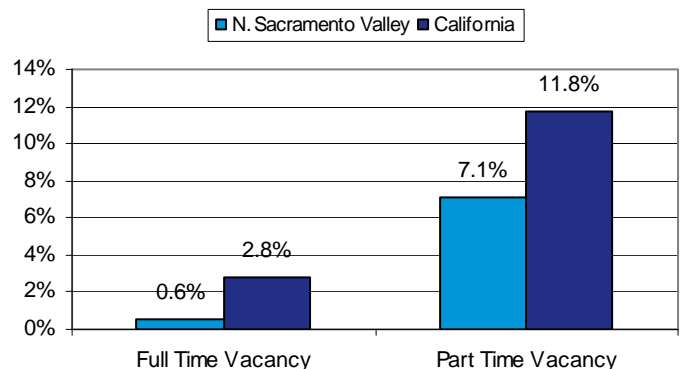
Percent Increase of General DDS, Active RDH and Population, N. Sacramento Valley (2002-2005)



**Dentists and Hygienists per 100,000 Population
N. Sacramento Valley (2005)**



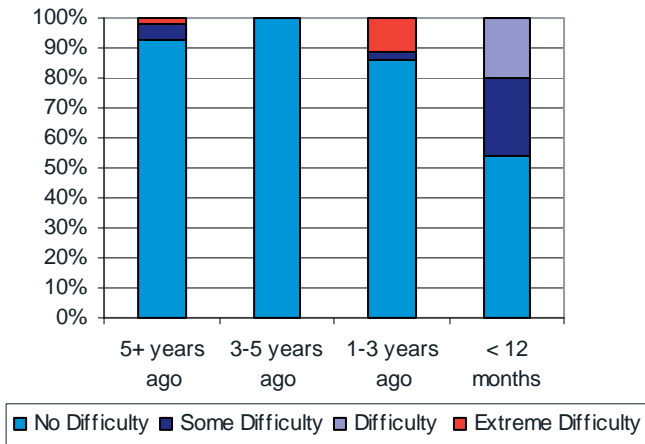
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



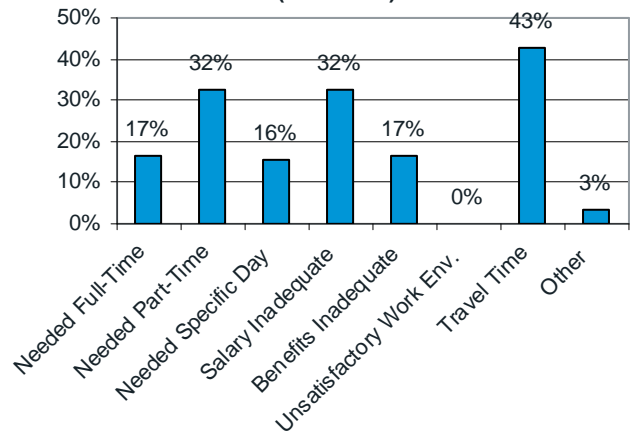
Between 2000 and 2005 the dental hygiene labor market in the Northern Sacramento Valley experienced a similar contraction as was noted statewide. In 2005, 11.0% of Northern Sacramento Valley RDHs reported they were actively looking for work and on average RDHs were looking for 8.8 additional hours of work.

The level of difficulty finding RDH employment in the Northern Sacramento Valley has increased in recent years, with 47% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, travel time was reported by 43% as a difficulty encountered, while 32% reported needing part time work and not being able to find it, and the same percent reporting inadequate salaries. Northern Sacramento Valley RDHs report a perception of oversupply of RDHs in the Northern Sacramento Valley, with 39.3% reporting an adequate supply, 47.6% reporting too many, and 13.1% reporting not enough RDHs. Northern Sacramento Valley RDHs are much more likely to report a perception of “too many” RDHs than RDHs are statewide.

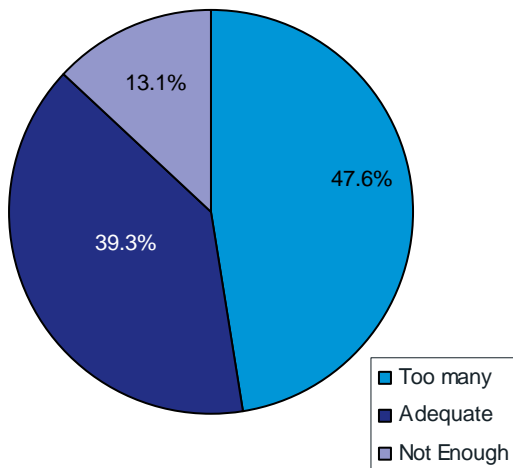
**Clinical RDH's Level of Difficulty Finding Employment When Last Sought
N. Sacramento Valley (2005-2006)**



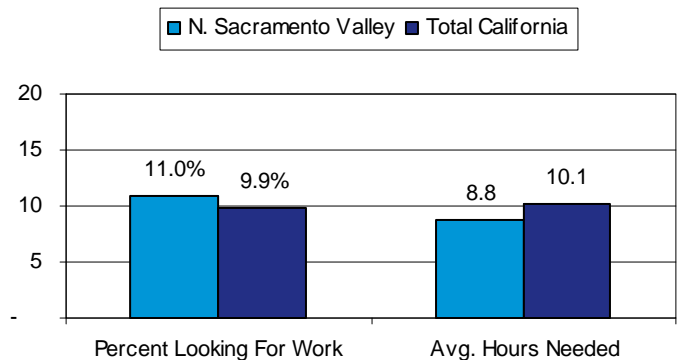
**Type of Difficulty Encountered Finding Employment in the Last 12 Months
N. Sacramento Valley Clinical RDHs (2005-2006)**



Clinical RDHs Opinion of Local Community Supply of RDHs: N. Sacramento Valley (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



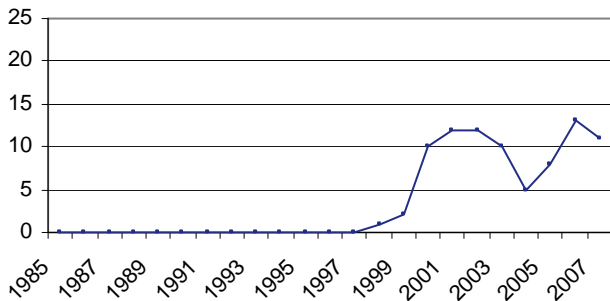
The Supply of Dental Hygienists in the Northern Sacramento Valley

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

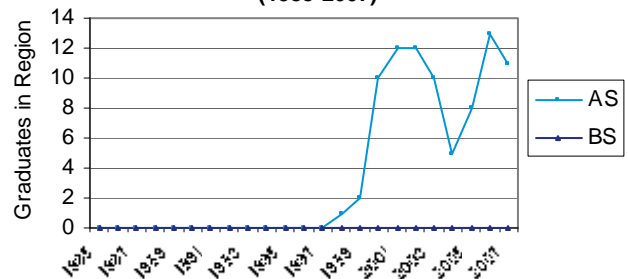
Inflow of Hygienists

The Northern Sacramento Valley has just one dental hygiene program at Shasta College, which began graduating RDHs in 1998. In 2007, the Northern Sacramento Valley produced 2.1% of all statewide graduates. The graduates in this region are not as diverse as in other regions, although this has fluctuated in the past few years. However, 27% of the 2007 graduates in the Northern Sacramento Valley were men, compared to 7% statewide.

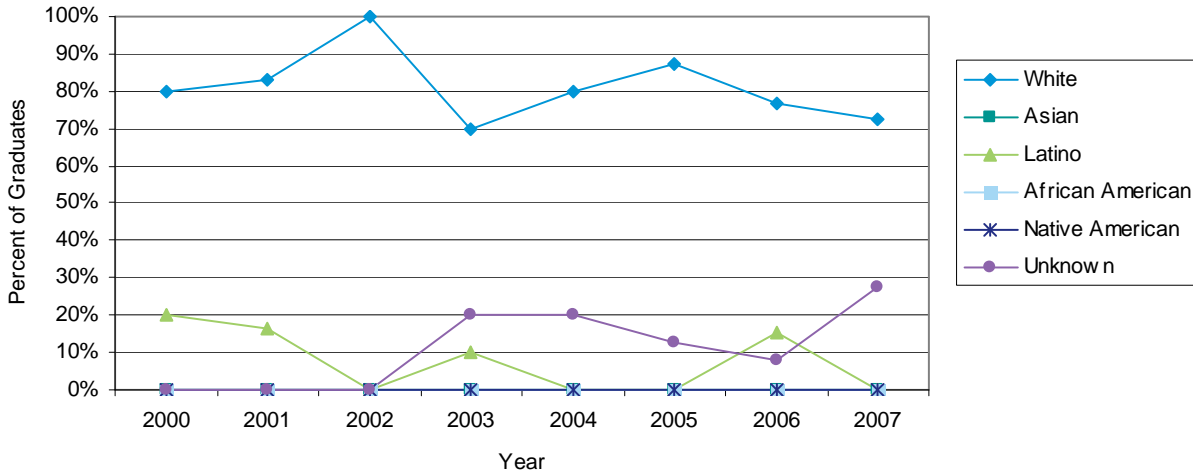
Dental Hygiene Graduates from N. Sacramento Valley Programs (1985-2007)



Trends in Degree Type Awarded N. Sacramento Valley Dental Hygiene Programs (1985-2007)



Racial Distribution of Dental Hygiene Graduates from N. Sacramento Valley Programs (2000-2007)

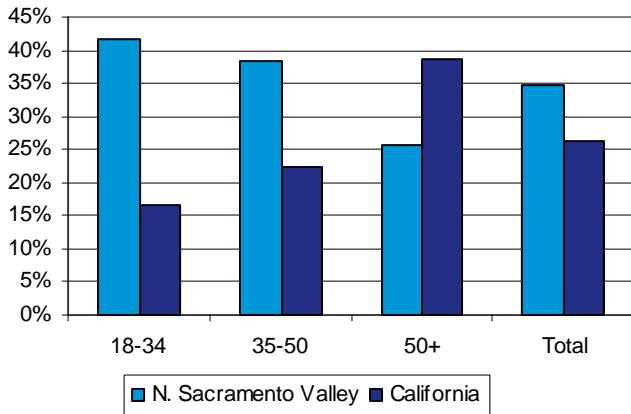


Another source of labor market supply is migration. In the Northern Sacramento Valley, 34.8% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Yet, less than half this percent report (16.3%) being first licensed out-of-state, compared to 22.6% statewide. Unlike statewide trends, younger RDHs in Northern Sacramento Valley are more likely to be educated out-of-state than older RDHs, and the Northern Sacramento Valley tends to have a higher proportion of out-of-state educated RDHs compared to California overall.

Outflow of Hygienists

A number of Northern Sacramento Valley RDHs (5.5%) report they plan to leave the workforce in the next 2 years (about 14 individuals), with an additional 14.5% expected to leave in 2-5 years (38 individuals). There are currently 11 graduates annually in the region, if they all remain employed in the Northern Sacramento Valley over the five years there would be 55 entrants, with 52 exits, which would hold the supply steady overall. Projected out ten years, with existing graduates and an additional 26.6% of the current workforce exiting, the region would experience a decrease of 12 hygienists, a 5% drop from current supply. The caveats to this projection are that an assumption of full retention is unlikely to hold, in and out migration is unaccounted for, and reported expectations of retirement may not translate into actual exits. As well, given the number

Percent of Active RDHs Educated Out-Of-State by Age, N. Sacramento Valley and California (2005-2006)

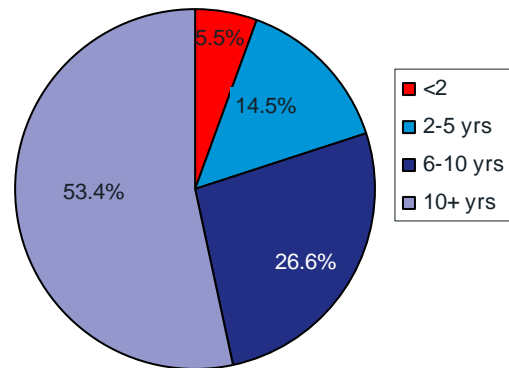


of RDHs in the region educated out of state, there does seem to be an additional inflow which may contribute to the overall growth trend.

The proportion of actively licensed RDHs in the Northern Sacramento Valley who are currently not working is lower than the statewide average (12.8% vs. 16.6%). The primary reasons reported for being out of the workforce were job disability and moving out of the job area. Of all RDHs not currently working, only 4.1% expect to return to work.

Just 5.2% of RDHs in the Northern Sacramento Valley are enrolled in an education program. Just over half of this small group is enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. The remainder is enrolled in either an RDHAP program or dental school. Just over one-quarter of RDHs in the Northern Sacramento Valley suggest they are interested in pursuing RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

Clinical RDHs Reported Years Left in Practice N. Sacramento Valley (2005-2006)

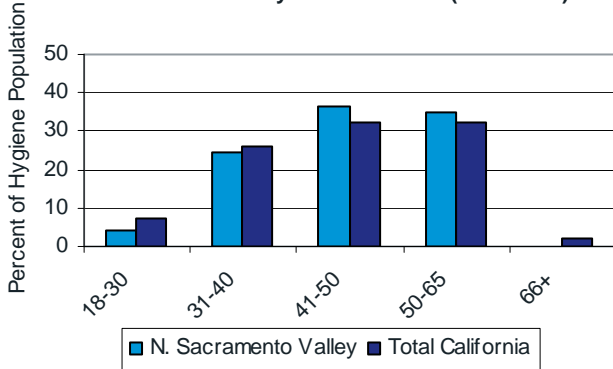


Northern Sacramento Valley Dental Hygiene Labor Market

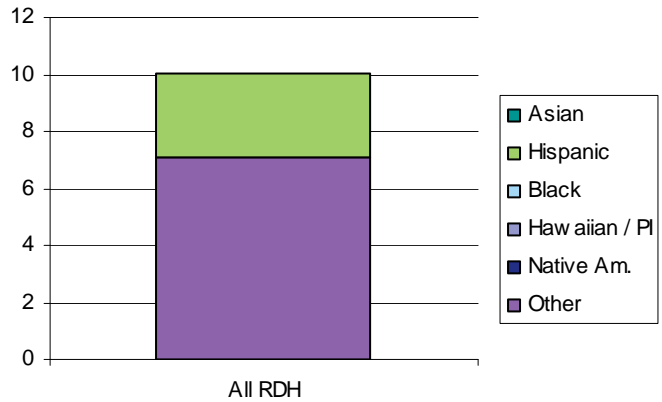
Demographics & Educational Level

The average age of a RDH in the Northern Sacramento Valley is 45.0 years, slightly older than the statewide average age of 44.7 years. The marital status of Northern Sacramento Valley RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 1.0% of RDHs in the Northern Sacramento Valley. The RDH workforce in the Northern Sacramento Valley is not very racially/ethnically diverse, with just one-tenth of all RDHs in the Northern Sacramento Valley from a minority group. A smaller than statewide average proportion of RDHs in the Northern Sacramento Valley (9.1%) report the ability to functionally communicate with their patients in a language other than English. The educational attainment of RDHs in the Northern Sacramento Valley mirrors the statewide distribution.

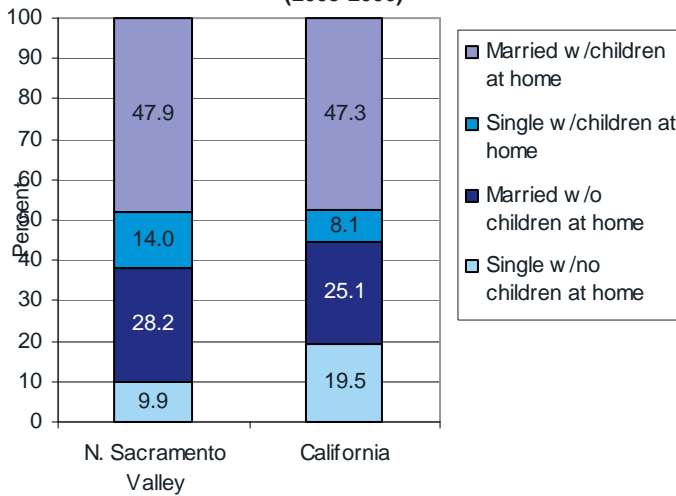
**Age Distribution of Active RDHs
N. Sacramento Valley and California (2005-2006)**



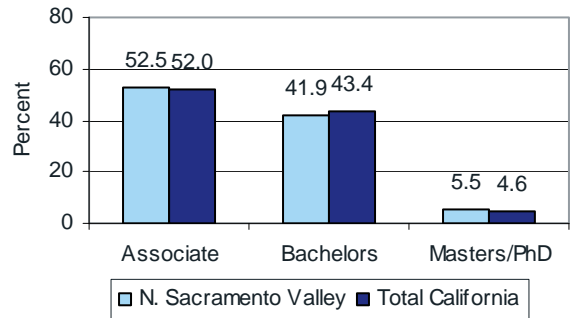
Racial/Ethnic Distribution of Non-White Active RDHs, N. Sacramento Valley (2005-2006)



**Marital Status and Family Responsibilities
Active RDHs, N. Sacramento Valley and California
(2005-2006)**



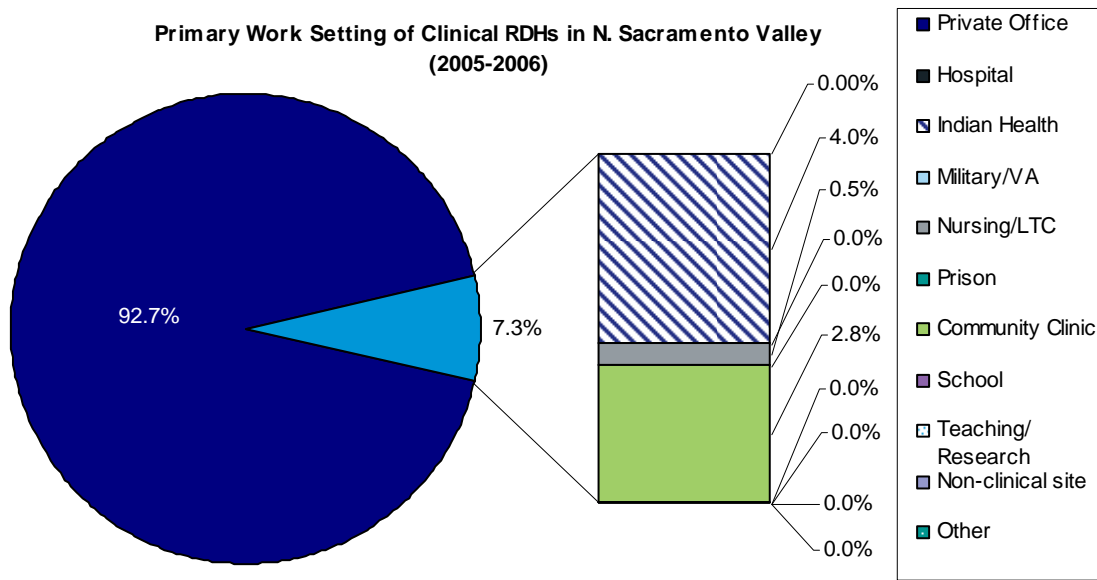
**Highest Degree Obtained In Any Field
Active RDHs, N. Sacramento Valley and California
(2005-2006)**



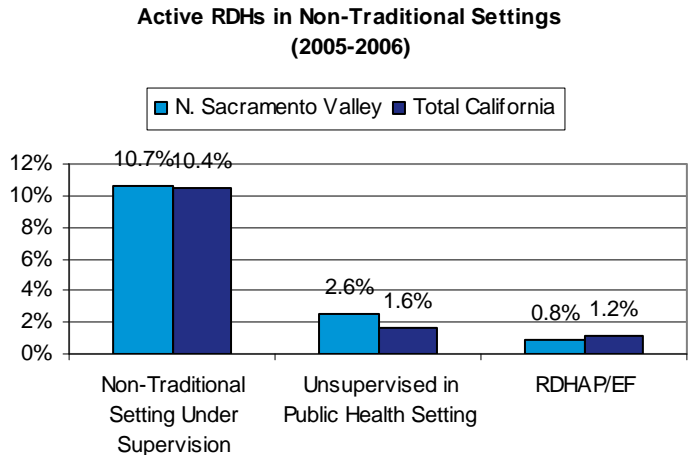
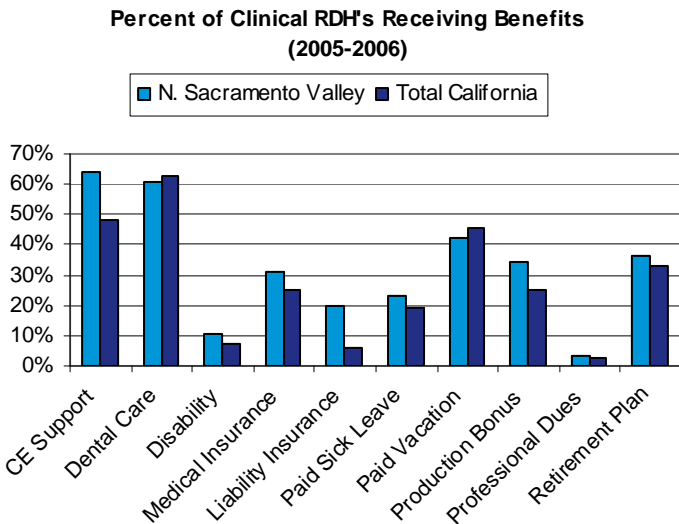
Practice Characteristics

On average, RDHs in Northern Sacramento Valley work 3.3 days per week, and 46.8 weeks per year, which mirrors statewide trends. Sixty-eight percent work in a single setting, 20% have two practice settings, and 12% have three or more settings. Northern Sacramento Valley RDHs tend to stay with their practices for a less time than RDHs in other regions, reporting an average of 6.8 years at their primary practice setting, and if they have them, 3.7 years at their secondary practice setting and 2.0 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research.

The primary work setting of 92.7% of RDHs is a private dental office. The 7.3% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.



Northern Sacramento Valley RDHs earn on average, \$39.49 per hour, with a standard deviation of \$7.74. This is \$6.15 less than the statewide average hourly wage. The minimum RDH hourly wage reported was \$25/hour and the maximum was \$60/ hour. RDHs in the Northern Sacramento Valley received a mixed number of employment benefits than do RDHs statewide.



The Northern Sacramento Valley has an average number of RDHs working in non-traditional setting (outside a dental office or clinic) under supervision and as RDHAPs/EF, slightly more working unsupervised in public health settings, and 6.3% of RDHs in the Northern Sacramento Valley are doing non-clinical work as their primary work activity. In 2005, the Northern Sacramento Valley had 1.0% of the State's total active RDHAPs, and 4.7% of the State's total active RDHEFs, yet the advanced licensees were still a small proportion of the overall hygiene workforce. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in the Northern Sacramento Valley is very mixed. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

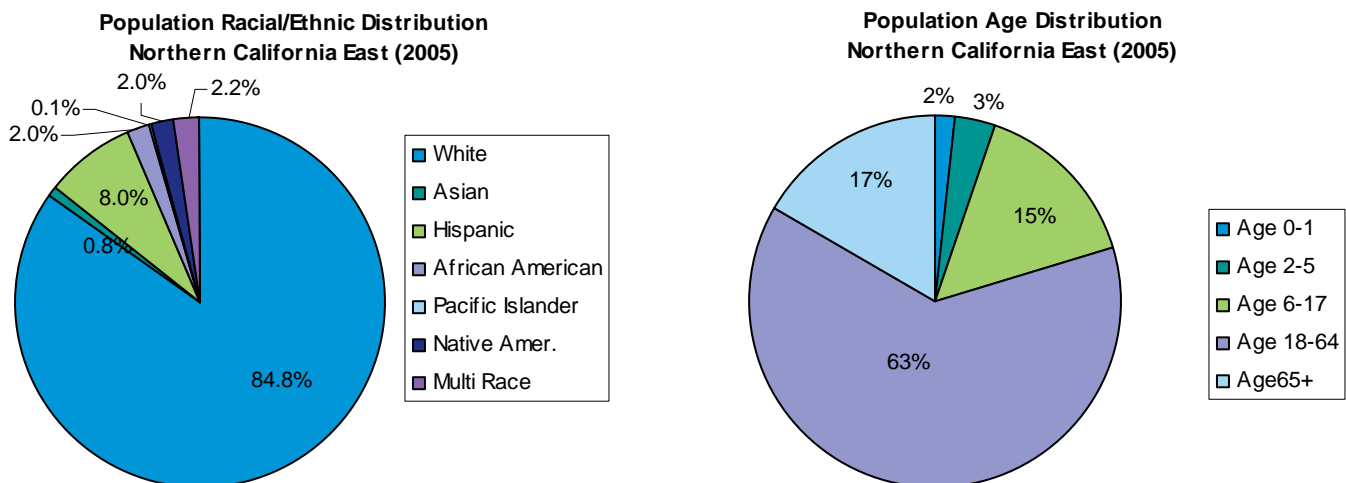
NORTHERN CALIFORNIA EAST REGIONAL SUMMARY

The Northern California East region includes the following counties: Lassen, Modoc, Nevada, Plumas, Sierra, and Siskiyou. In 2005 there were 117 active registered dental hygienists (RDHs) in this region.

- In 2005, the small population in the Northern California East region was less well off economically, older, and much less diverse compared to the statewide population.
- Northern California East has an average supply of dentists combined with a higher than average supply of hygienists resulting in a greater number of RDHs per dentist in the region than statewide.
- The RDH population in the region is growing more quickly than the general population but less quickly than the dentist population. Since there is no education program in the region, there are no new graduates from which to project incoming supply. In-migration from other California regions and out-of-state is the sole source of incoming RDHs, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are lower than average, benefits are less prevalent, there are greater RDH vacancies, a greater perception of “not enough” RDHs, a lower percent of RDHs looking for work, and there is less difficulty finding work, although a wide range of difficulties were reported.
- The workforce in the region is less diverse and less highly educated than the RDH workforce statewide. A much larger percent of RDHs in the region than statewide are working in non-traditional settings.
- Overall, the labor market indicators show a better than average labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

Demand for Dental Hygienists in Northern California East

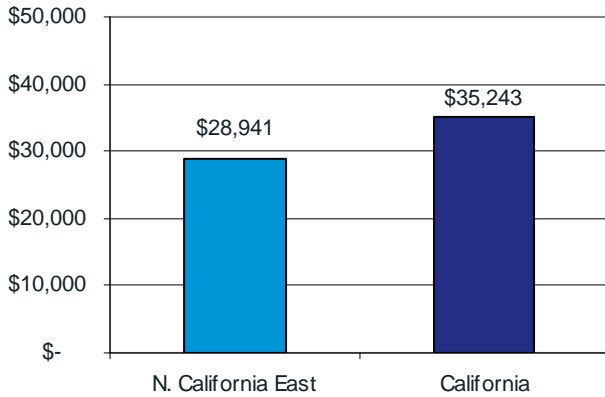
The demand for RDHs in Northern California East is driven by dental offices’ response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. Northern California East has lower than average poverty rates but also lower than average income compared with the state as a whole, and hence a lower capacity to pay for care. In 2005, the population of Northern California East was 216,570 – 0.6% of the total population of the State. Compared with California as a whole, the general population in Northern California East is much less racially/ethnically diverse and older.



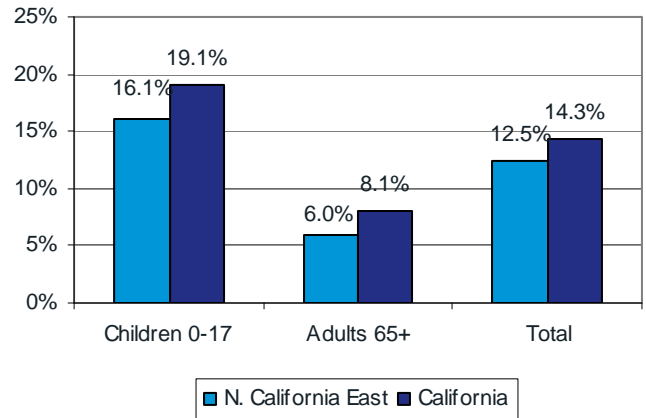
The general population of Northern California East is growing less slowly than the state as a whole, however the dentist and RDH population have grown faster than statewide averages between 2002 and 2005. The

RDH population in Northern California East is growing more quickly than the population but less quickly than dentists. There is an average supply of dentists in the region, (72.5/100,000 population) resulting from the fact that 0.9% of California's general practice dentists live in this region, compared with 0.7% of California's population.

**Per Capita Income
N. California East (2005)**

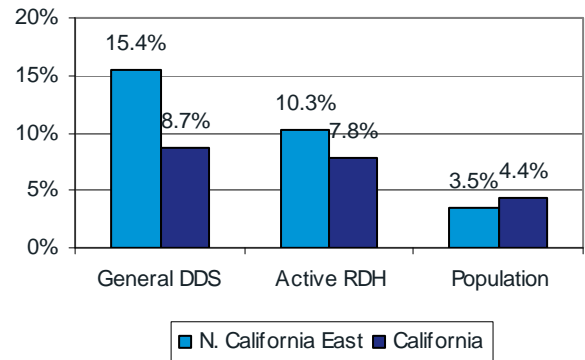


**Percent of Population in Poverty
N. California East (2005)**

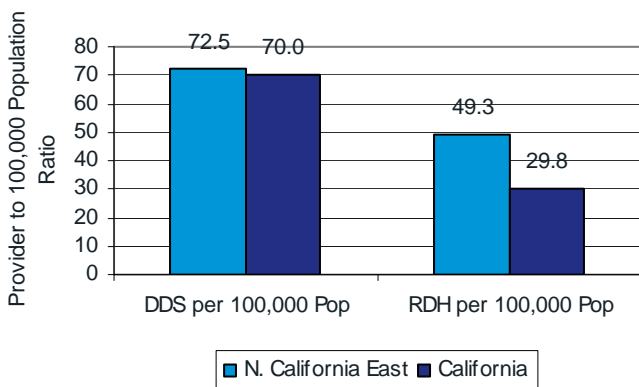


Northern California East's RDH population increased 10.3% in the past three years and Northern California East has a greater share (1.0%) of the State's RDH population than total population, resulting in a ratio of 49.3 RDH per 100,000 population. Northern California East has 0.68 hygienists per dentist, significantly greater than the statewide average of 0.43. There are a greater number of reported RDH part-time vacancies in Northern California East dental practices where RDHs are currently employed than reported statewide, but fewer full-time vacancies. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

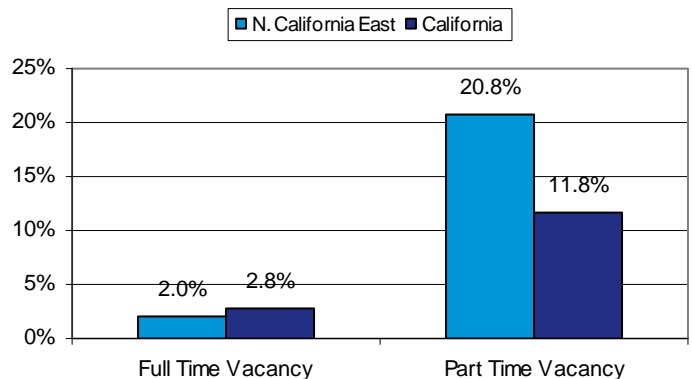
Percent Increase of General DDS, Active RDH and Population, N. California East (2002-2005)



**Dentists and Hygienists per 100,000 Population
N. California East (2005)**



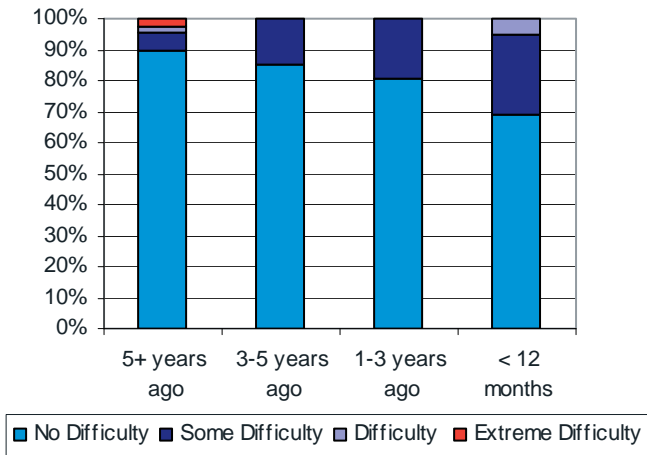
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



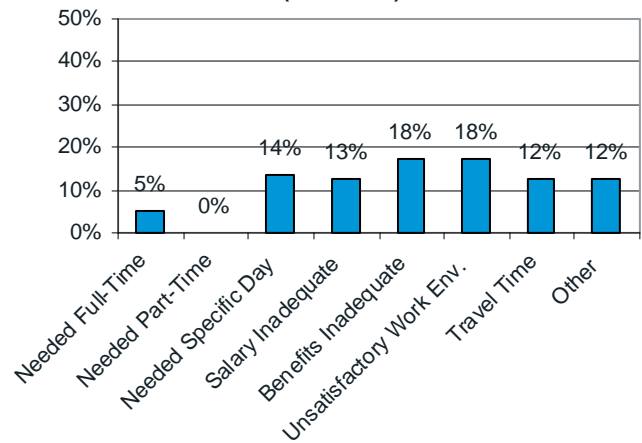
Between 2000 and 2005 the dental hygiene labor market in Northern California East experienced a less severe contraction than was noted statewide. In 2005, 6.4% of Northern California East RDHs reported they were actively looking for work and on average RDHs were looking for 14.0 additional hours of work.

The level of difficulty finding RDH employment in the Northern California East has increased in recent years, with 31% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, 18% reported difficulties finding adequate benefits and 18% reported difficulties finding a satisfactory work environment. Northern California East RDHs report a perception of undersupply of RDHs in the region, with 64.0% reporting an adequate supply, 4.3% reporting too many, and 31.7% reporting not enough. Northern California East RDHs are much less likely to report a perception of “too many” RDHs than RDHs are statewide.

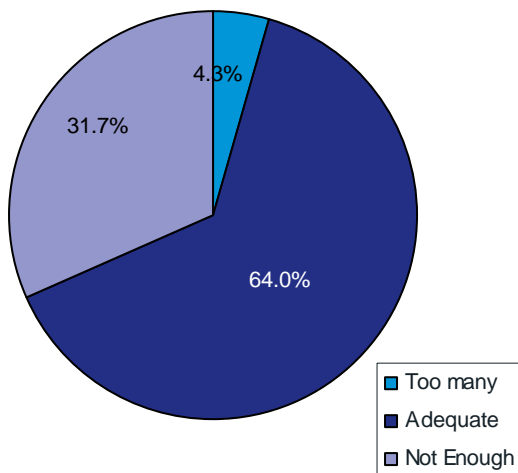
**Clinical RDH's Level of Difficulty Finding Employment When Last Sought
N. California East (2005-2006)**



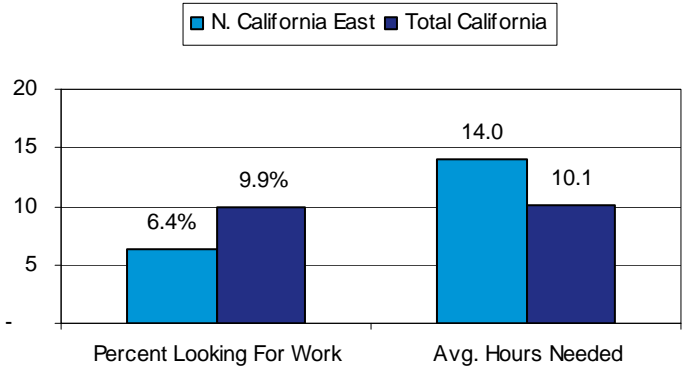
**Type of Difficulty Encountered Finding Employment in the Last 12 Months
N. California East Clinical RDHs (2005-2006)**



Clinical RDHs Opinion of Local Community Supply of RDHs: N. California East (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



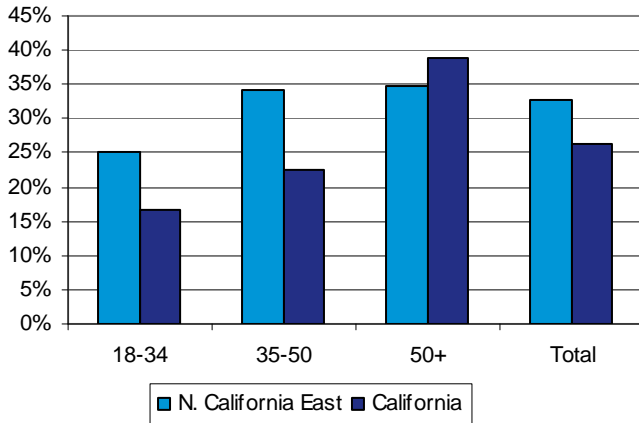
The Supply of Dental Hygienists in Northern California East

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

Inflow of Hygienists

Northern California East has no dental hygiene programs, but is flanked by the Northern Sacramento Valley and Greater Sacramento regions which together have three dental hygiene programs and produce 11.5% of the statewide graduates annually. These areas are likely to be the feeders for the Northern California East region, however specific data on the patterns of new graduates from other regions entering or returning to the Northern California East are not available.

Percent of Active RDHs Educated Out-Of-State by Age, N. California East and California (2005-2006)



region, however specific data on the patterns of new graduates from other regions entering or returning to the Northern California East are not available.

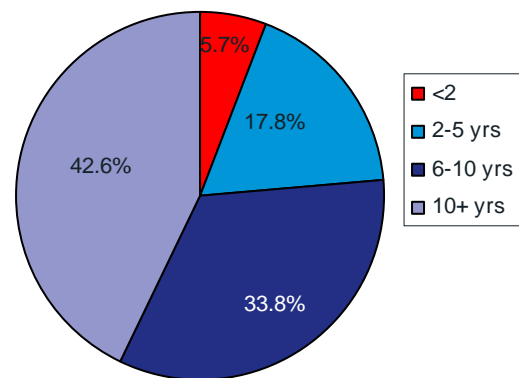
Data on location of first licensure and location of education provide insight into the inter-state migration. In Northern California East, 32.7% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 25.3% of practicing RDHs in Northern California East were first licensed out-of-state, compared to 22.6% statewide. Northern California East tends to have a greater proportion of out-of-state educated RDHs compared to California overall, particularly in the younger cohorts.

Outflow of Hygienists

A small proportion (5.7%) of Northern California East RDHs reported they plan to leave the workforce in the next 2 years, with another 17.8% expecting to leave in 2-5 years, and over half (57.4%) expecting to exit by 2015. The proportion of actively licensed RDHs in Northern California East who are currently not working is higher than the statewide average (21.5% vs. 16.6%). Inactive RDHs in this region did not report reasons for being inactive, although 31.3% noted they had an intention to return to the workforce in the future.

Less than 1.0% of RDHs in Northern California East are enrolled in an education program, and this small percent is enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. Just under one-fifth of RDHs in the Northern California East suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

Clinical RDHs Reported Years Left in Practice N. California East (2005-2006)

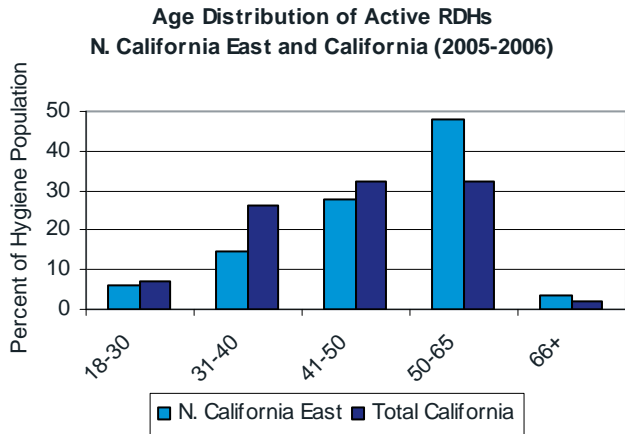


Northern California East Dental Hygiene Labor Market

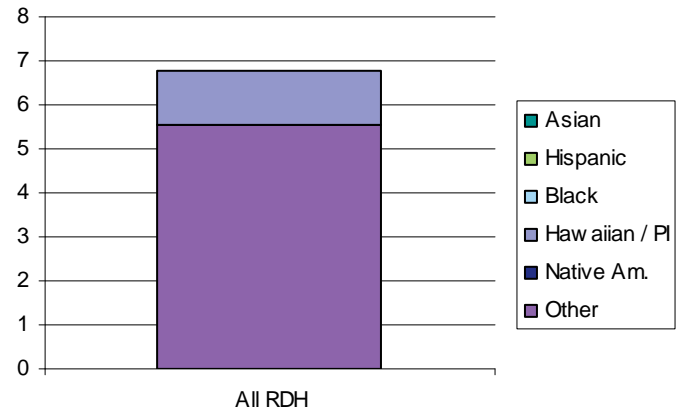
Demographics & Educational Level

The average age of a RDH in Northern California East is 47.2 years, slightly older than the statewide average age of 44.7 years. The marital status of Northern California East RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 1.1% of RDHs in Northern California East. The RDH workforce in Northern California East is not racially/ethnically

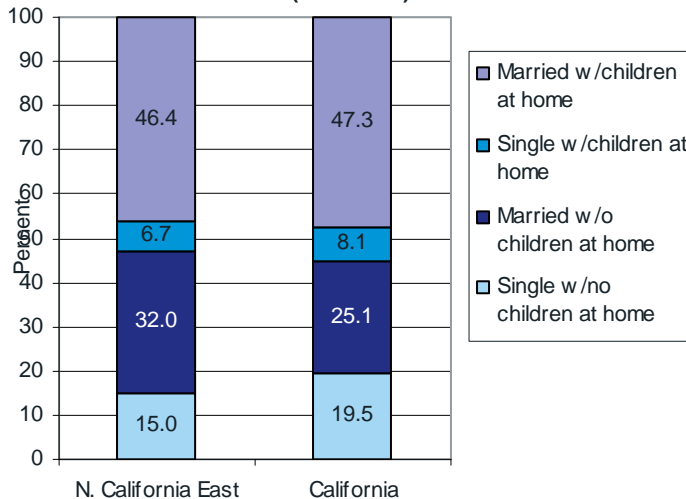
diverse, as less than 7% of RDHs in Northern California East are non-white, and only 18.8% report the ability to functionally communicate with their patients in a language other than English.



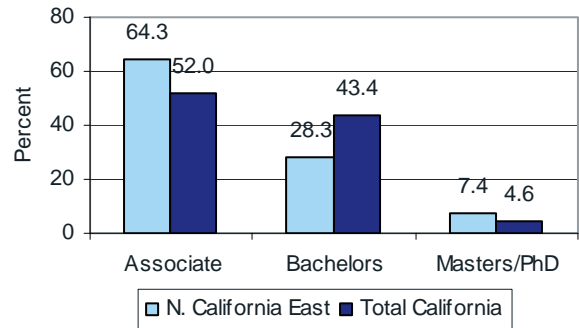
**Racial/Ethnic Distribution of Non-White Active RDHs, Total and Age <35
N. California East (2005-2006)**



**Marital Status and Family Responsibilities
Active RDHs, N. California East and California
(2005-2006)**



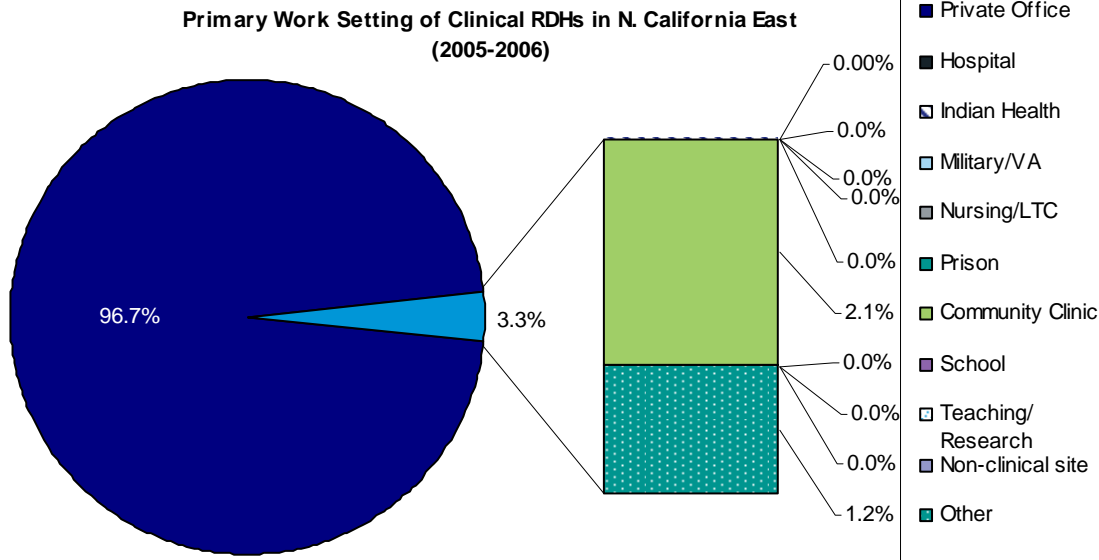
**Highest Degree Obtained In Any Field
Active RDHs, N. California East and California
(2005-2006)**



A large percent (64.3%) of Northern California East RDHs report an associate degree as the highest level earned in any field, while 28.3% report having earned a baccalaureate degree, and, interestingly, 7.4% a masters degree or PhD.

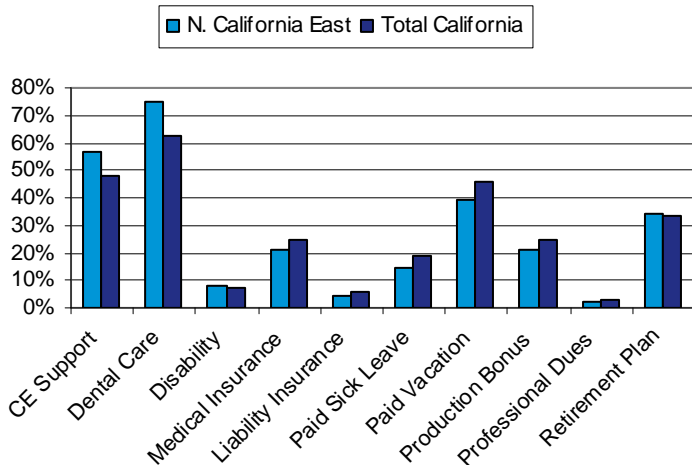
Practice Characteristics

On average, RDHs in the Northern California East work 3.1 days per week, and 45.5 weeks per year, slightly less than statewide trends. Sixty-three percent of RDHs work in a single setting, 24% have two practice settings, and 13% have three or more settings. Northern California East RDHs tend to stay with their practices for a long time, reporting an average of 8.8 years at their primary practice setting, and if they have them, 5.2 years at their secondary practice setting and 3.4 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research. The primary work setting of 96.7% of RDHs is a private dental office. The 3.3% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.

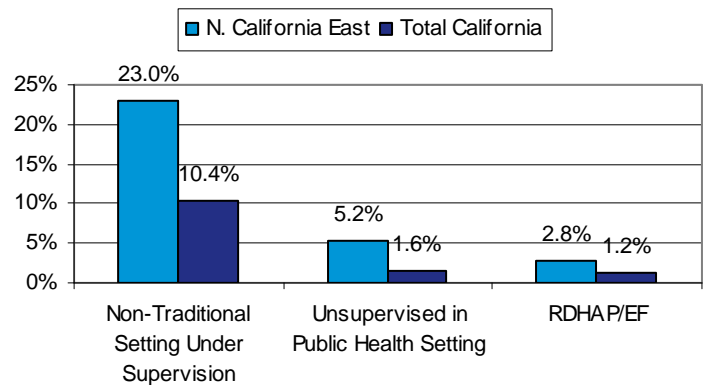


Northern California East RDHs earn on average, \$44.18 per hour, with a standard deviation of \$6.86. This is \$1.46 less than the statewide average hourly wage. The minimum RDH hourly wage reported was \$25/hour and the maximum was \$65 per hour. RDHs in Northern California East are more likely to receive some employment benefits (CE, dental care, disability and retirement plans) but less likely to receive any others than are RDHs statewide.

Percent of Clinical RDHs Receiving Benefits (2005-2006)



Active RDHs in Non-Traditional Settings (2005-2006)



Northern California East has much greater than average proportions of RDHs working in non-traditional settings (outside a dental office or clinic) under supervision, unsupervised and in alternative practice. In 2005, Northern California East had 3.0% of the State's active RDHAPs, and none of the State's active RDHEFs, and 4.7% of RDHs in the Northern California East are doing non-clinical work as their primary work activity. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in Northern California East is better than average. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

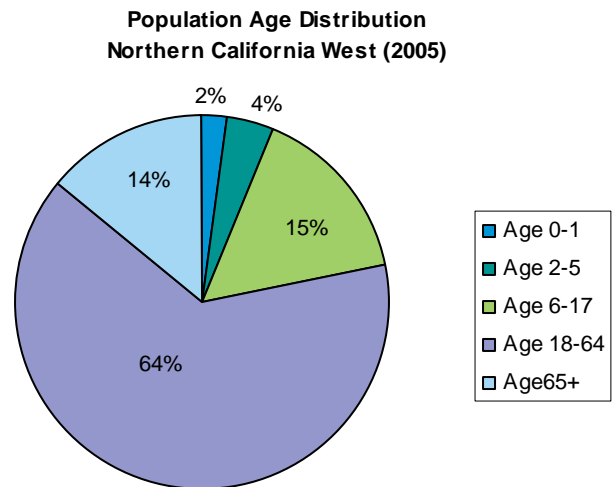
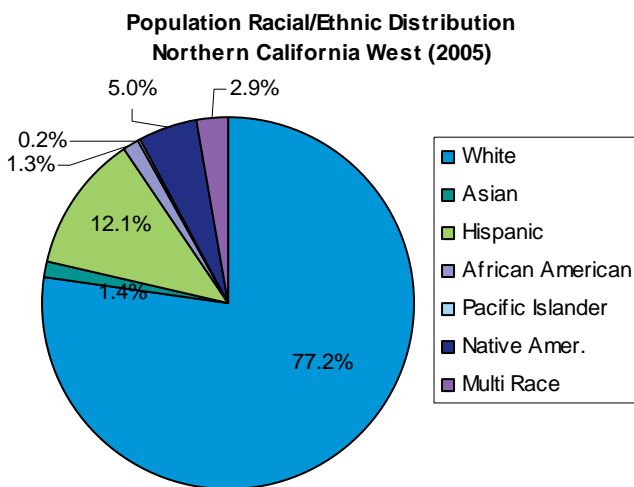
NORTHERN CALIFORNIA WEST REGIONAL SUMMARY

The Northern California West region includes the following counties: Del Norte, Humboldt, Lake, Mendocino, and Trinity. In 2005 there were 112 active registered dental hygienists (RDHs) in this region.

- In 2005, the small population in the Northern California West region was less well off economically, older, and much less diverse compared to the statewide population.
- Northern California West has a lower than average supply of dentists combined with a higher than average supply of hygienists resulting in a greater number of RDHs per dentist in the region than statewide.
- The RDH population in the region is growing more quickly than the general population and the dentist population. Since there is no education program in the region, there are no new graduates from which to project incoming supply. In-migration from other California regions and out-of-state is the sole source of incoming RDHs, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are lower than average, benefits are more prevalent, there are greater full-time RDH vacancies, a greater perception of “not enough” RDHs, a lower percent of RDHs looking for work, and there is less difficulty overall finding work, although a wide range of difficulties were reported, particularly by RDHs needing one specific day they could not find.
- The workforce in the region is less diverse, older and equally educated than the RDH workforce statewide. A much larger percent of RDHs in the region than statewide are working in non-traditional settings.
- Overall, the labor market indicators show a better than average labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

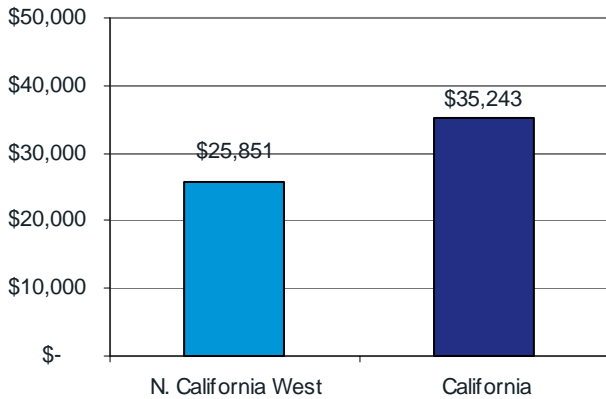
Demand for Dental Hygienists in Northern California West

The demand for RDHs in Northern California West is driven by dental offices’ response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. Northern California West has higher than average poverty rates and lower than average income compared with the state as a whole, and hence a lower capacity to pay for care. In 2005, the population of Northern California West was 328,936 – 0.9% of the total population of the State. Compared with California as a whole, the general population in Northern California West is much less racially/ethnically diverse and has greater proportions of the population in the over 65 range.

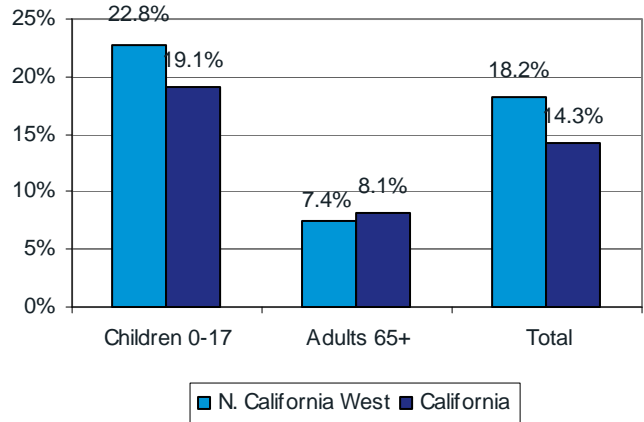


The general population and dentist population of Northern California West grew less rapidly than their respective populations in the state as a whole between 2002 and 2005. The RDH population in Northern California West, however, is growing at a significantly greater rate than the RDH population in California as a whole. Hence, the supply of RDHs is growing relative to overall population growth and to the supply of dentists. There is a lower than average supply of dentists in the region, (54.2/100,000 population) resulting from the fact that 0.7% of California's general practice dentists live in this region, compared with 0.9% of California's population.

**Per Capita Income
N. California West (2005)**

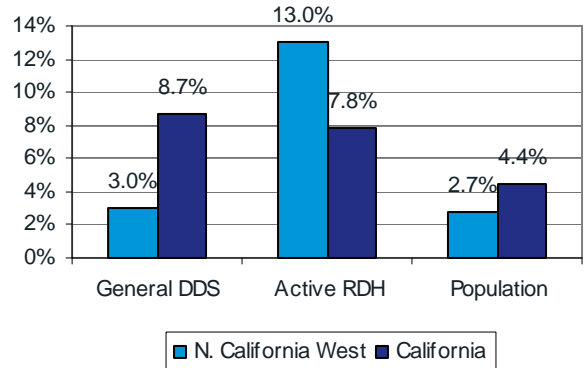


**Percent of Population in Poverty
N. California West (2005)**

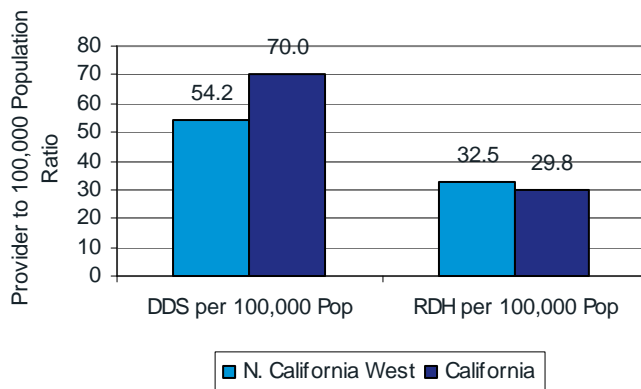


Northern California West's RDH population increased 13.0% in the past three years and the region has a greater share (1.0%) of the State's RDH population than total population, resulting in a ratio of 32.5 RDH per 100,000 population. Northern California West has 0.60 hygienists per dentist, greater than the statewide average of 0.43. There are a fewer number of reported RDH part-time vacancies in Northern California West dental practices where RDHs are currently employed than reported statewide, but a greater number of full-time vacancies. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

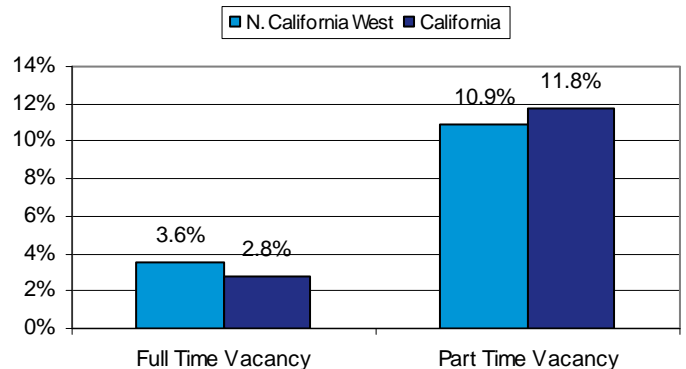
Percent Increase of General DDS, Active RDH and Population, N. California West (2002-2005)



**Dentists and Hygienists per 100,000 Population
N. California West (2005)**



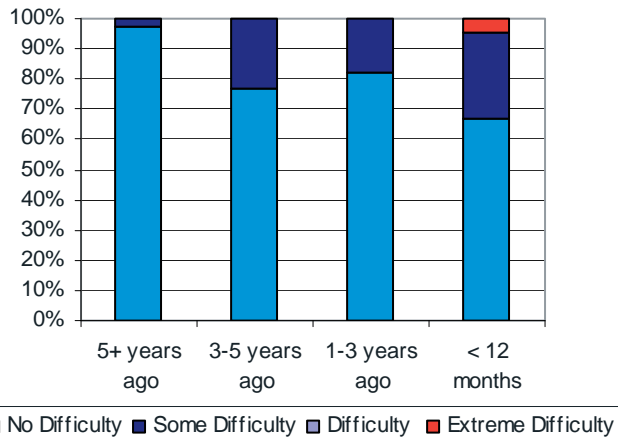
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



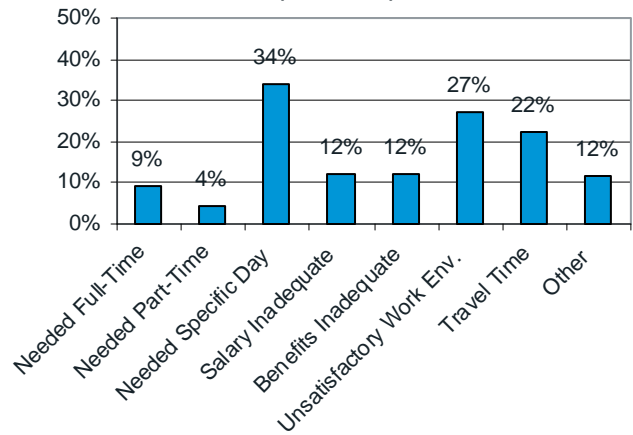
Between 2000 and 2005 the dental hygiene labor market in the Northern California West experienced a less severe contraction than was noted statewide. In 2005, 6.5% of Northern California West RDHs reported they were actively looking for work and on average RDHs were looking for 6.5 additional hours of work.

The level of difficulty finding RDH employment in Northern California West has increased in recent years, with 33% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, 34% reported they needed a specific day and could not find it, while 27% reported being unable to find a satisfactory work environment. Northern California West RDHs report a perception of undersupply of RDHs in the region, with only 46.0% reporting an adequate supply, 11.5% reporting too many, and 42.5% reporting not enough. Northern California West RDHs are more likely to report a perception of “not enough” RDHs than RDHs statewide.

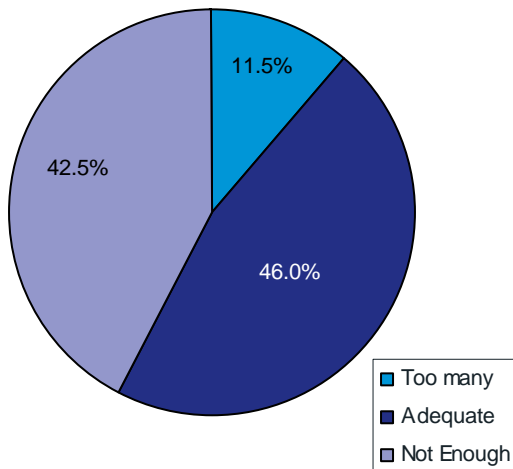
**Clinical RDH's Level of Difficulty Finding Employment When Last Sought
N. California West (2005-2006)**



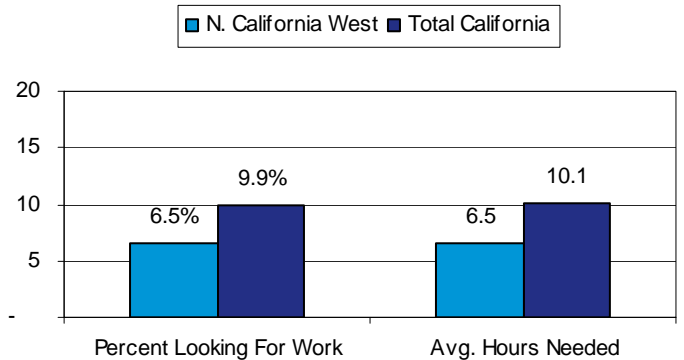
**Type of Difficulty Encountered Finding Employment in the Last 12 Months
N. California West Clinical RDHs (2005-2006)**



Clinical RDHs Opinion of Local Community Supply of RDHs: N. California West (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



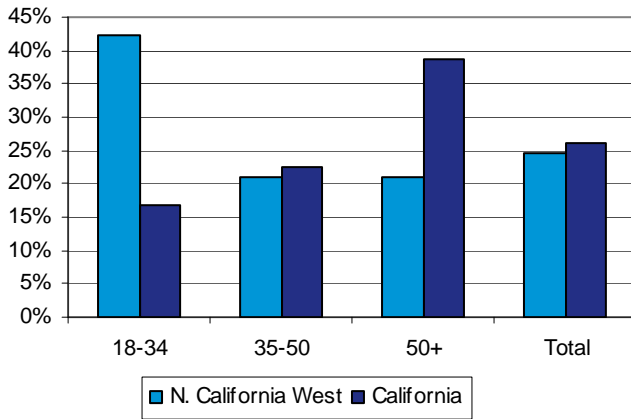
The Supply of Dental Hygienists in Northern California West

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

Inflow of Hygienists

Northern California West has no dental hygiene programs, but is flanked by the Bay Area, Northern Sacramento Valley and Greater Sacramento regions which together have nine dental hygiene programs and produce 36.1% of the statewide graduates annually. These areas are likely to be the feeders for Northern California West, however specific data on the patterns of new graduates from other regions entering or returning to the Northern California West are not available.

Percent of Active RDHs Educated Out-Of-State by Age, N. California West and California (2005-2006)

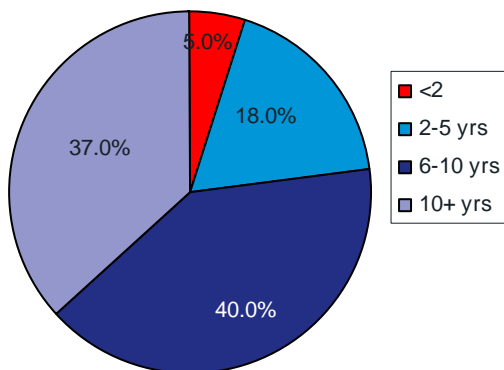


Data on location of first licensure and location of education provide insight into the inter-state migration. In Northern California West, 24.6% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 17.0% of practicing RDHs in Northern California West were first licensed out-of-state, compared to 22.6% statewide. Northern California West tends to have a similar proportion of out-of-state educated RDHs compared to California overall, except within in the youngest cohorts.

Outflow of Hygienists

Five percent of Northern California West RDHs reported they plan to leave the workforce in the next 2 years, with 18.0% expecting to leave in 2-5 years, and 63.0% expected to exit by the year 2015. The caveats to this projection are that in and out migration is unaccounted for, and reported expectations of retirement may not translate into actual exits.

Clinical RDHs Reported Years Left in Practice N. California West (2005-2006)



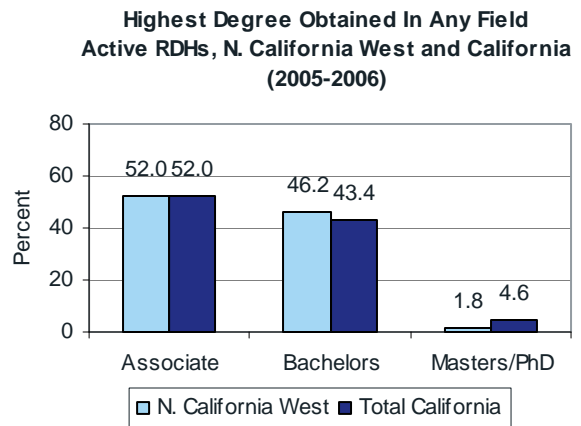
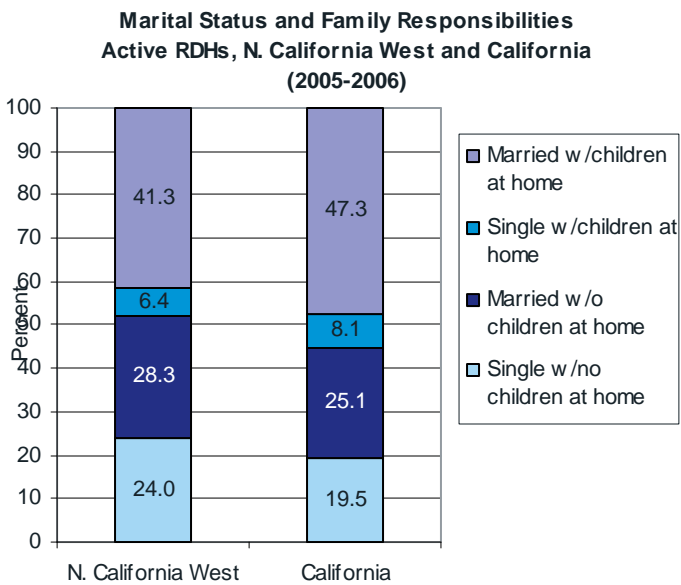
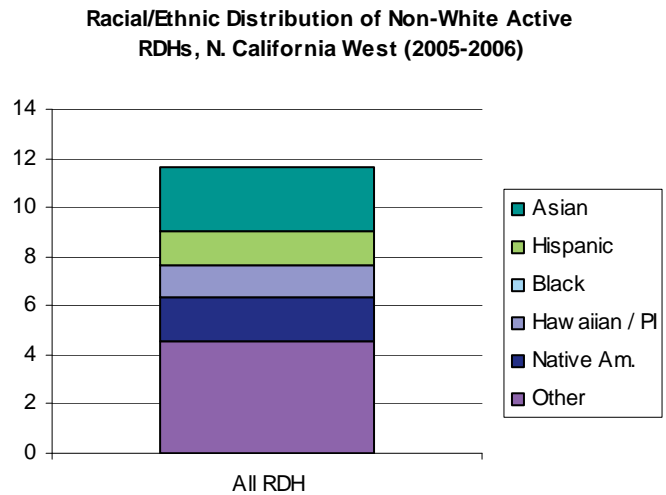
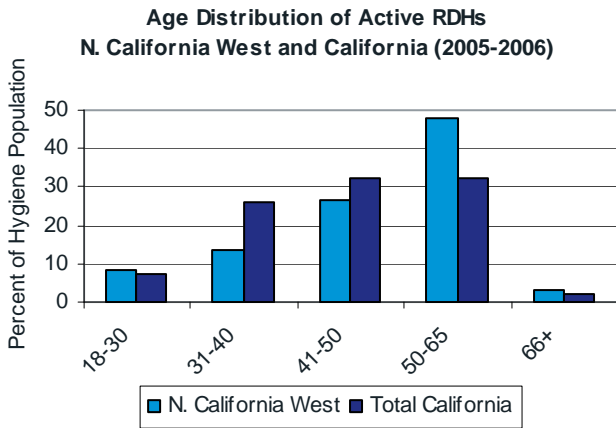
The proportion of actively licensed RDHs in Northern California West who are currently not working is lower than the statewide average (11.5% vs. 16.6%). The RDHs in this region reported retirement and job disability as reasons for being inactive, and none of those not working had had intention to return to the workforce in the future.

Just 2.8% of RDHs in Northern California West are enrolled in an education program, and all of this small group is enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. Just under one-sixth of RDHs in Northern California West suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

Northern California West Dental Hygiene Labor Market

Demographics & Educational Level

The average age of an RDH in Northern California West is 47.6 years, slightly older than the statewide average age of 44.7 years. A large proportion of active RDHs are in the 50-65 year old age category. The marital status of Northern California West RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 3.1% of RDHs in the region. The RDH workforce in Northern California West is not racially/ethnically diverse, as less than 12% of RDHs in Northern California West are non-white, although 24.8% report the ability to functionally communicate with their patients in a language other than English.



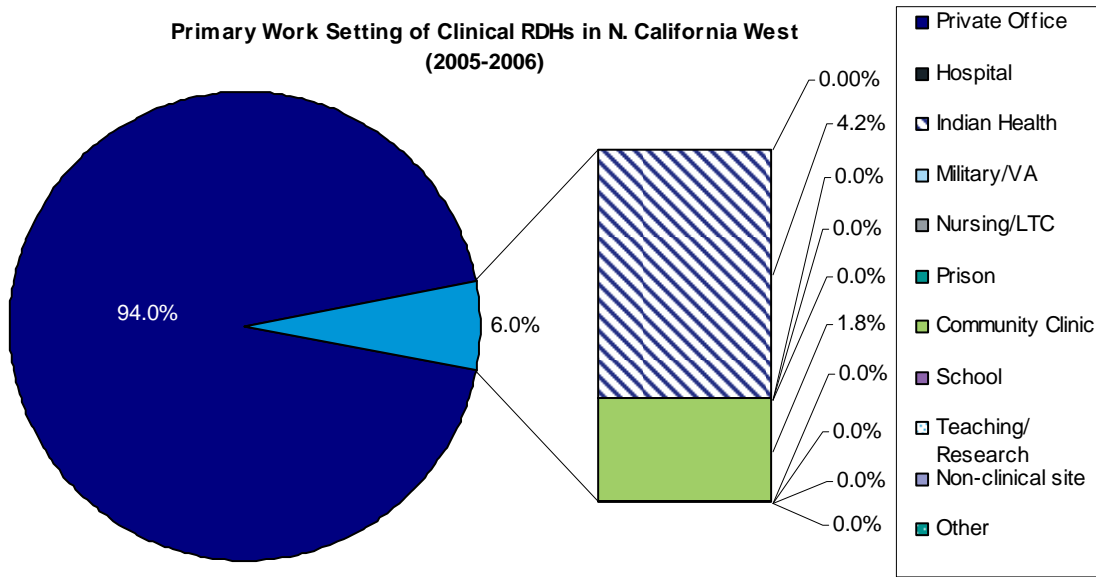
A similar percent (52.0%) of Northern California West RDHs as statewide report an associate degree as the highest level earned in any field, while 46.2% report having earned a baccalaureate degree, and only 1.8% a masters degree or PhD.

Practice Characteristics

On average, RDHs in Northern California West work 3.5 days per week, and 45.1 weeks per year, which mirrors statewide trends. Sixty-three percent of RDHs work in a single setting, 29% have two practice settings, and 8% have three or more settings. Northern California West RDHs tend to stay with their

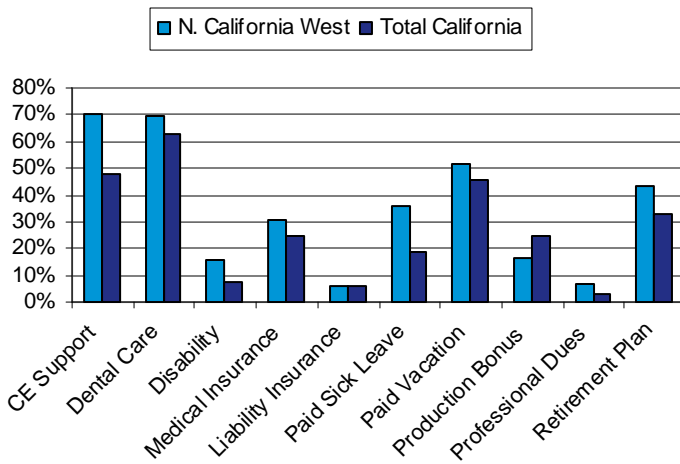
practices for a long time, reporting an average of 10.6 years at their primary practice setting, and if they have them, 6.0 years at their secondary practice setting, but only 0.9 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research.

The primary work setting of 94.0% of RDHs is a private dental office. The 6.0% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.

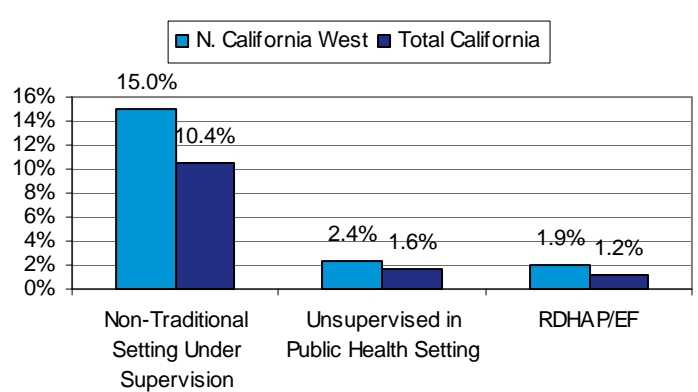


Northern California West RDHs earn on average, \$44.27 per hour, with a standard deviation of \$9.18. This is \$1.37 less than the statewide average hourly wage. The minimum RDH hourly wage reported was \$31.50/hour and the maximum was \$72.50 per hour. RDHs in Northern California West also are more likely to receive all types of employment benefits except production bonuses than are RDHs statewide.

Percent of Clinical RDH's Receiving Benefits (2005-2006)



Active RDHs in Non-Traditional Settings (2005-2006)



Northern California West has greater than average proportions of RDHs working in non-traditional settings (outside a dental office or clinic) under supervision, unsupervised and in alternative practice. In 2005, the Northern California West had 1.0% of the State's active RDHAPs, and 4.8% of the State's active RDHEFs, and 2.2% of RDHs in the Northern California West are doing non-clinical work as their primary work activity. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in Northern California West is better than average. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

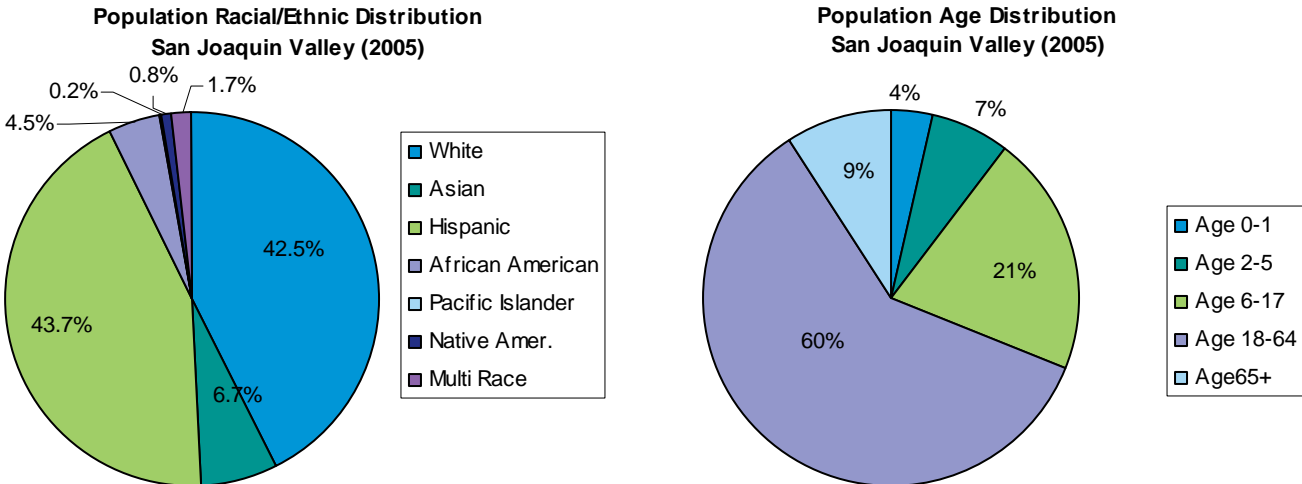
SAN JOAQUIN VALLEY REGIONAL SUMMARY

The San Joaquin Valley includes the following counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. In 2005 there were 1004 active registered dental hygienists (RDHs) in this region.

- The economic condition of the population in the San Joaquin Valley is among the worst in the state, while the population is the fourth largest and one of the most diverse.
- The San Joaquin Valley has a very low supply of dentists combined with a slightly lower than average supply of hygienists, resulting in a higher than average number of RDHs per dentist in the region as exists statewide.
- The RDH population in the region is increasing but is outpaced by both growth in the dentist and general population. New graduates in the region are projected to significantly outpace expected retirements/exits from the workforce, almost doubling the RDH population by 2015. Migration to and from other regions may mitigate this somewhat, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are lower and benefits are mixed, there are fewer full and part-time RDH vacancies, there is a greater perception of too many RDHs, a greater proportion RDHs looking for work, much more difficulty finding work, with a wide range of difficulties reported.
- The workforce in the region is less diverse, younger and less highly educated than the RDH workforce statewide. A greater percent of RDHs in the region are working in non-traditional settings than statewide.
- Overall, the labor market indicators show a very impacted labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

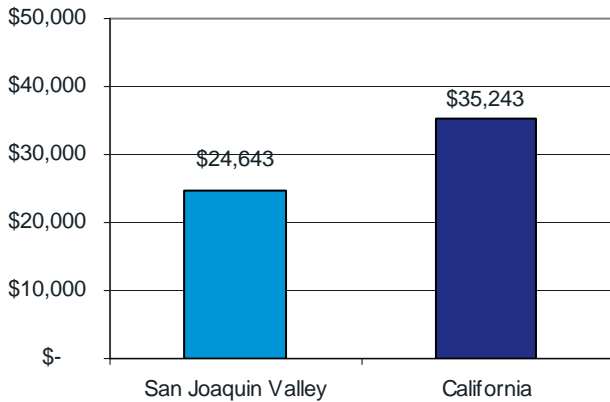
Demand for Dental Hygienists in the San Joaquin Valley

The demand for RDHs in the San Joaquin Valley is driven by dental offices' response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. The San Joaquin Valley has higher than average poverty rates and lower than average income compared with the state as a whole, and hence a lower capacity to pay for care. In 2005, the population of the San Joaquin Valley was 3,784,633 – 10.2% of the total population of the State. The general population in the San Joaquin Valley is very diverse, with particularly high proportion of Hispanics and younger populations compared with California as a whole.

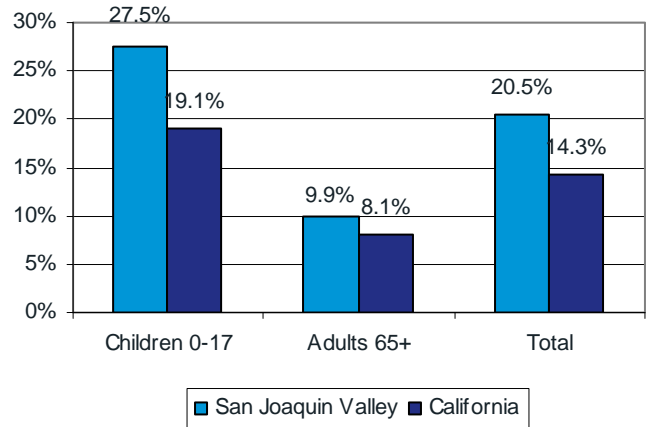


The general population and dentist population in the San Joaquin Valley are growing at a faster rate than California as a whole while the supply of RDHs is growing at a slower rate than the RDHs population across the state, and is not keeping pace with overall population growth or the supply of dentists. There is a low supply of dentists in the region, (44.2/100,000 population) resulting from the fact that only 6.5% of California's general practice dentists live in this region, compared with 10.2% of California's population.

**Per Capita Income
San Joaquin Valley (2005)**

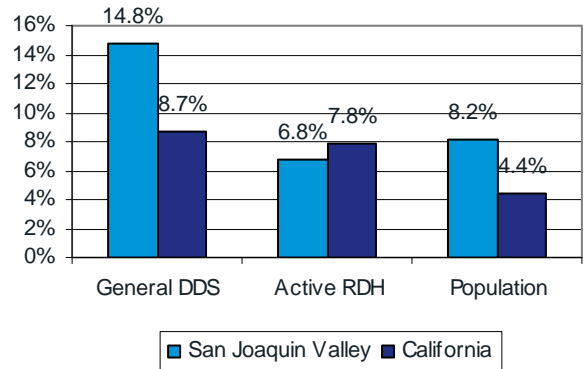


**Percent of Population in Poverty
San Joaquin Valley (2005)**

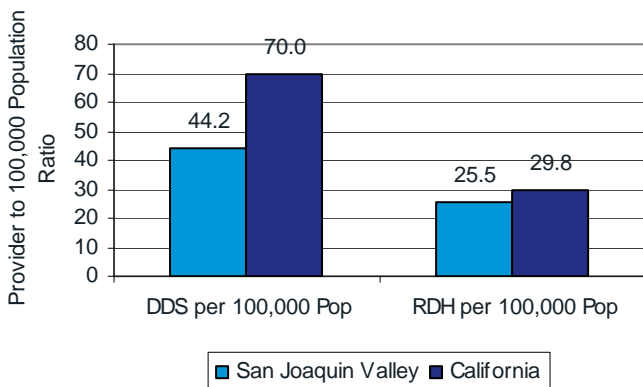


The San Joaquin Valley's RDH population increased 6.8% in the past three years, yet the San Joaquin Valley still has a lower share (8.8%) of the State's RDH population than total population, resulting in a ratio of 25.5 RDH per 100,000 population. The San Joaquin Valley has 0.58 hygienists per dentist, greater than the statewide average of 0.43. Despite the growth in the dentist population, there are fewer reported RDH vacancies in San Joaquin Valley dental practices where RDHs are currently employed than reported statewide. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

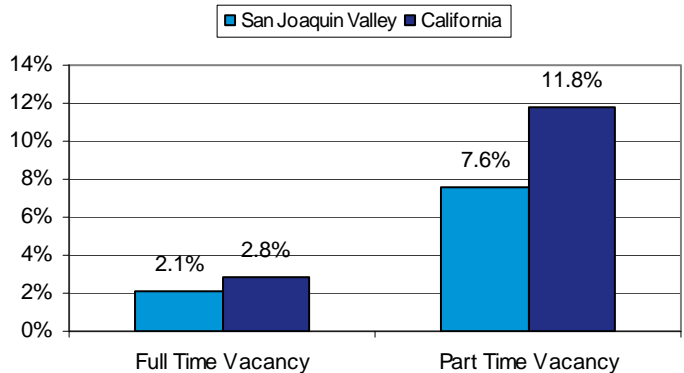
Percent Increase of General DDS, Active RDH and Population, San Joaquin Valley (2002-2005)



**Dentists and Hygienists per 100,000 Population
San Joaquin Valley (2005)**



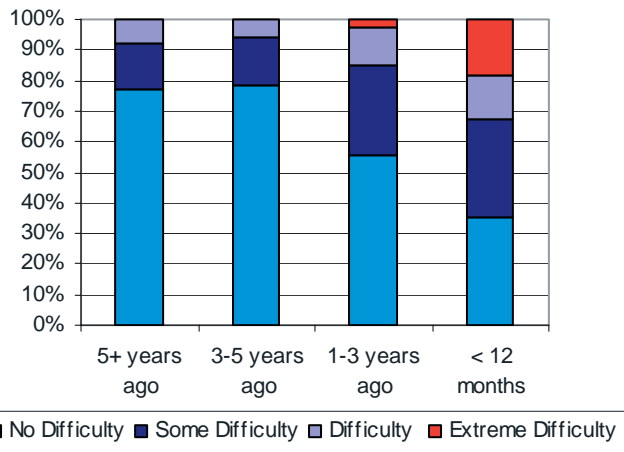
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



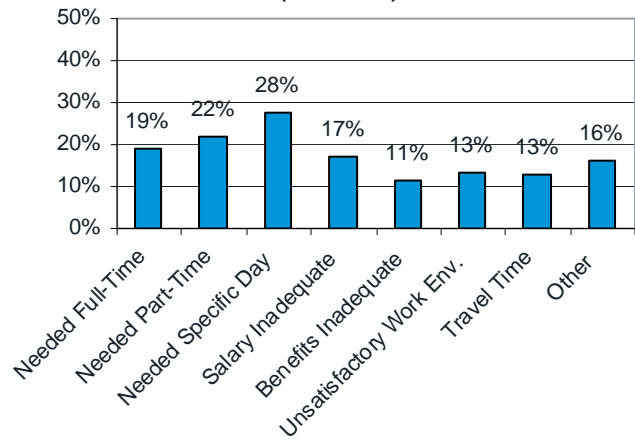
Between 2000 and 2005 the dental hygiene labor market in the San Joaquin Valley experienced a more severe contraction than experienced statewide. In 2005, 20.5% of San Joaquin Valley RDHs reported they were actively looking for work and on average were looking for 10.5 additional hours of work.

The level of difficulty finding employment encountered in the San Joaquin Valley has increased in recent years, with 65% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, 28% reported that they were seeking work on one specific day and could not find it. San Joaquin Valley RDHs report a perception of over supply of RDHs in the San Joaquin Valley, with 44.5% reporting an adequate supply, 50.3% reporting too many, and only 5.2% reporting not enough RDHs. San Joaquin Valley RDHs are more likely to report a perception of “too many” RDHs than RDHs are statewide.

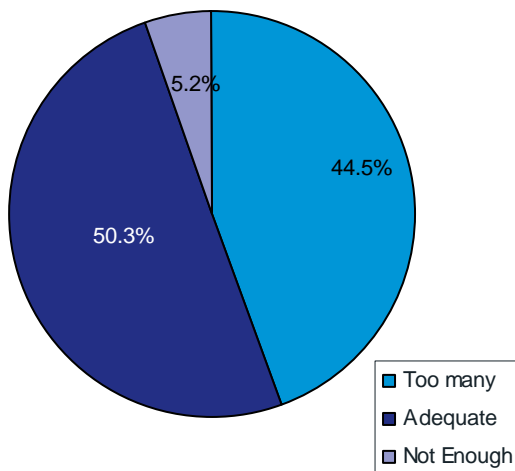
**Clinical RDH's Level of Difficulty Finding Employment When Last Sought
San Joaquin Valley (2005-2006)**



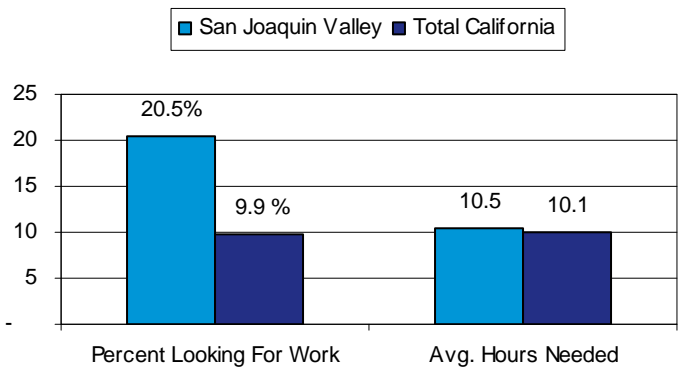
**Type of Difficulty Encountered Finding Employment in the Last 12 Months
San Joaquin Valley Clinical RDHs (2005-2006)**



Clinical RDHs Opinion of Local Community Supply of RDHs: San Joaquin Valley (2005-2006)



Percent of Clinical RDH's Actively Looking for Work and Average Hours of Work Needed (2005-2006)



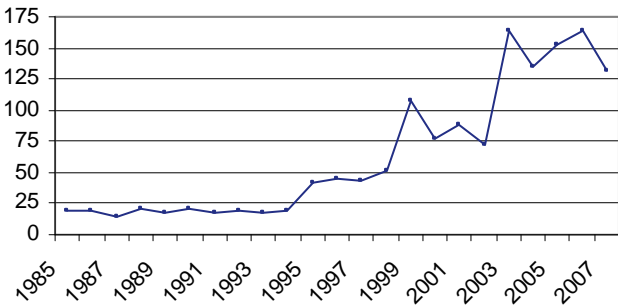
The Supply of Dental Hygienists in the San Joaquin Valley

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

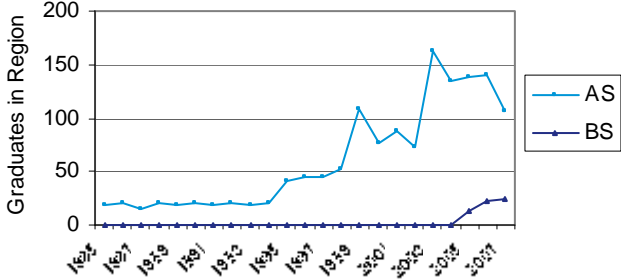
Inflow of Hygienists

The San Joaquin Valley has five dental hygiene programs: Fresno City College, San Joaquin Valley College-Visalia, San Joaquin College – Rancho Cucamonga, Taft College and University of the Pacific. In 2007, the San Joaquin Valley produced 25.1% of all statewide graduates. The University of the Pacific is one of three baccalaureate RDH programs in the state, and began graduating students in 2005. The increase in the total number of graduates and increase in associate degree graduates in the region is due to a steady expansion of programs in the region.

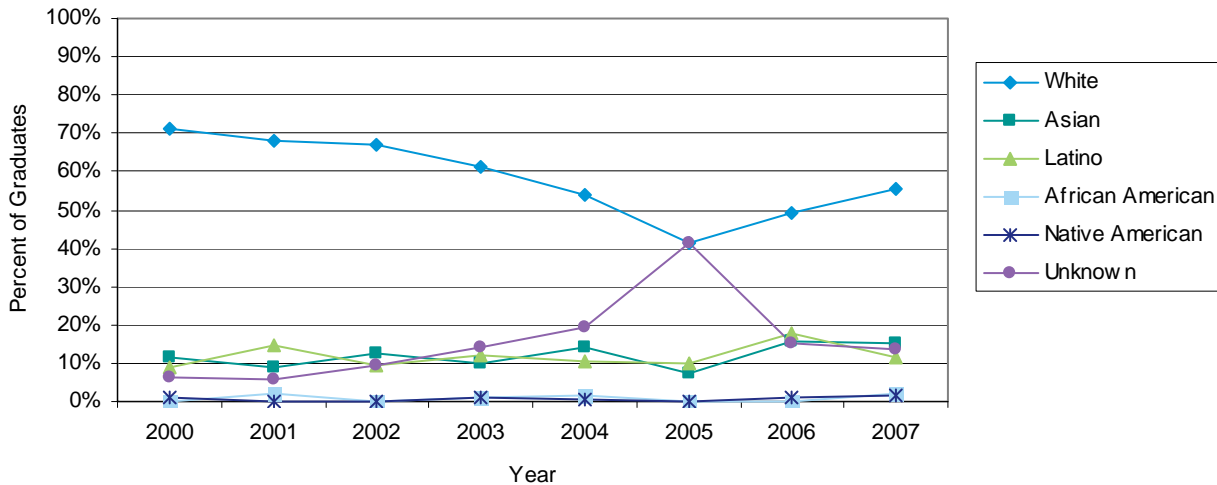
Dental Hygiene Graduates from San Joaquin Valley Programs (1985-2007)



Trends in Degree Type Awarded San Joaquin Valley Dental Hygiene Programs (1985-2007)



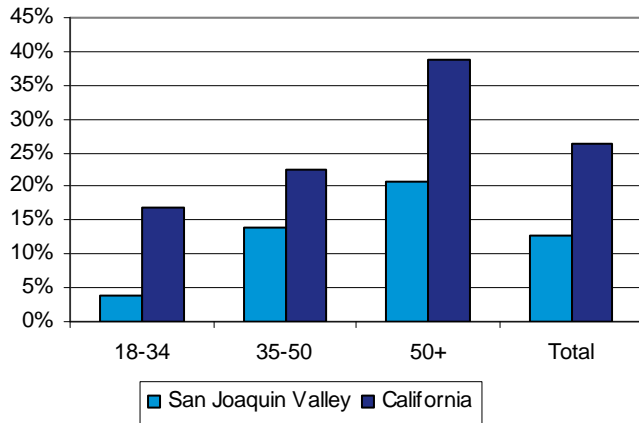
Racial Distribution of Dental Hygiene Graduates from San Joaquin Valley Programs (2000-2007)



The RDH workforce is becoming increasingly diverse. In 2007 56% of the region’s graduates were white, down from 71% in 2000. Only 6% of the graduates in the San Joaquin Valley are men, compared to 7% statewide. Another source of labor market supply is migration. In the San Joaquin Valley, 12.8% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 10.1% of practicing RDHs in the San Joaquin Valley were first licensed out-of-state, compared to 22.6% statewide. Older RDHs are more likely to be educated out-of-state than younger RDHs, however the San

Joaquin Valley tends to have a much lower proportion of out-of-state educated RDHs compared to California overall.

Percent of Active RDHs Educated Out-Of-State by Age, San Joaquin and California (2005-2006)



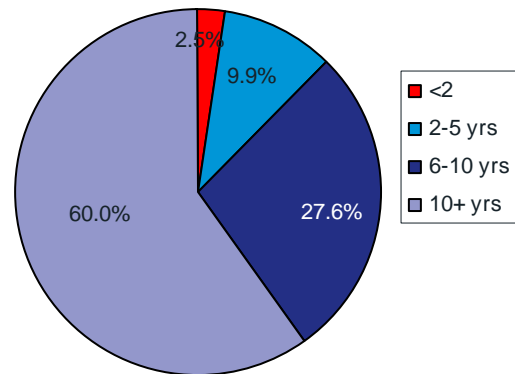
Outflow of Hygienists

A small proportion of San Joaquin Valley RDHs (2.5%) report they plan to leave the workforce in the next 2 years (about 25 individuals), and an additional 9.9% plan to leave in 2-5 years (99 individuals), slightly lower exit rates than across the state as a whole. There are currently 131 graduates annually in the region, if they all remain employed in the San Joaquin Valley over the five years there would be 655 entrants, with 124 exits, indicating a large increase overall. Projected out ten years, with existing graduates and an additional 27.6% of the current workforce exiting, the region would experience an increase of 908 hygienists, a 90% increase from current supply.

The caveats to this projection are that an assumption of full retention is unlikely to hold, in and out migration is unaccounted for, and reported expectations of retirement may not translate into actual exits. As well, this region is flanked by two regions without dental hygiene education programs and hence is likely to export graduates to those areas.

The proportion of actively licensed RDHs in the San Joaquin Valley who are currently not working is lower than the statewide average (13.2% vs. 16.6%). The primary reason reported for being out of the workforce was family responsibilities and children (25.6%). Of the hygienists not working due to childrearing responsibilities, 100% planned to return to work. Of all RDHs not currently working, 39.4% expect to return to work.

Clinical RDHs Reported Years Left in Practice San Joaquin Valley (2005-2006)



Less than 2.6% of RDHs in the San Joaquin Valley are enrolled in an education program. Of the enrolled, about 80% are in an RDHAP or RDHEF program, while 20% are enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. One-quarter of RDHs in the San Joaquin Valley suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

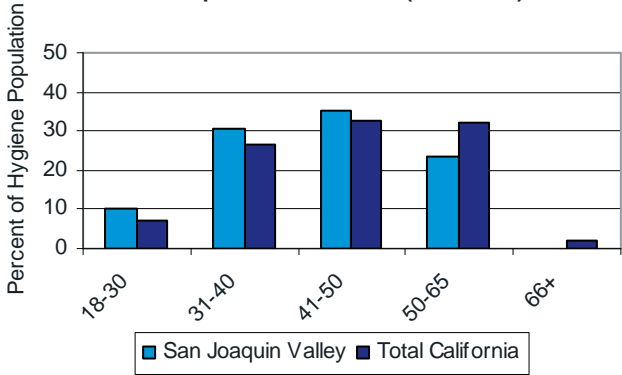
San Joaquin Valley Dental Hygiene Labor Market

Demographics & Educational Level

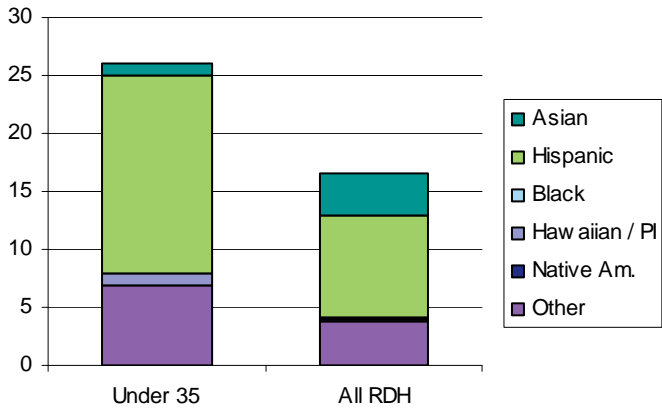
The average age of a RDH in the San Joaquin Valley is 42.3 years, slightly younger than the statewide average age of 44.7 years. The marital status of San Joaquin Valley RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 4.9% of RDHs in the San Joaquin Valley. The RDH workforce in the San Joaquin Valley is increasingly racially/ethnically diverse. Non-white minority groups represent over one-quarter of RDHs under the age of 35, compared to just over

one-sixth of all RDHs in the San Joaquin Valley. Just over one-quarter (23.7%) of RDHs in the San Joaquin Valley report the ability to functionally communicate with their patients in a language other than English.

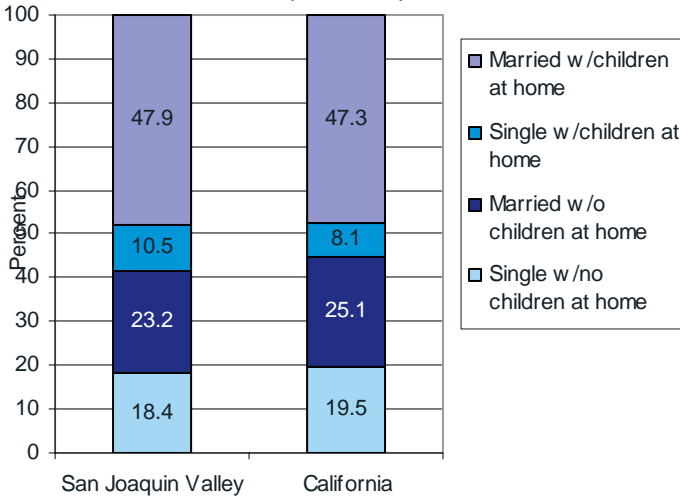
**Age Distribution of Active RDHs
San Joaquin and California (2005-2006)**



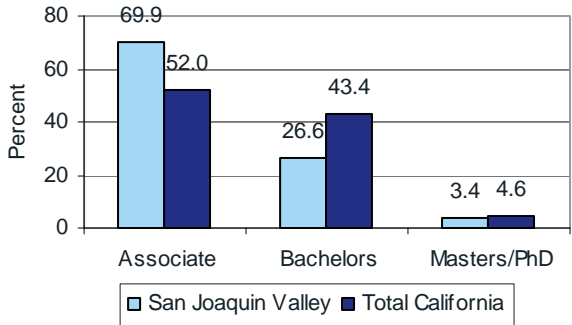
**Racial/Ethnic Distribution of Non-White Active RDHs, Total and Age <35
San Joaquin Valley (2005-2006)**



**Marital Status and Family Responsibilities
Active RDHs, San Joaquin Valley and California
(2005-2006)**



**Highest Degree Obtained In Any Field
Active RDHs, San Joaquin Valley and California
(2005-2006)**

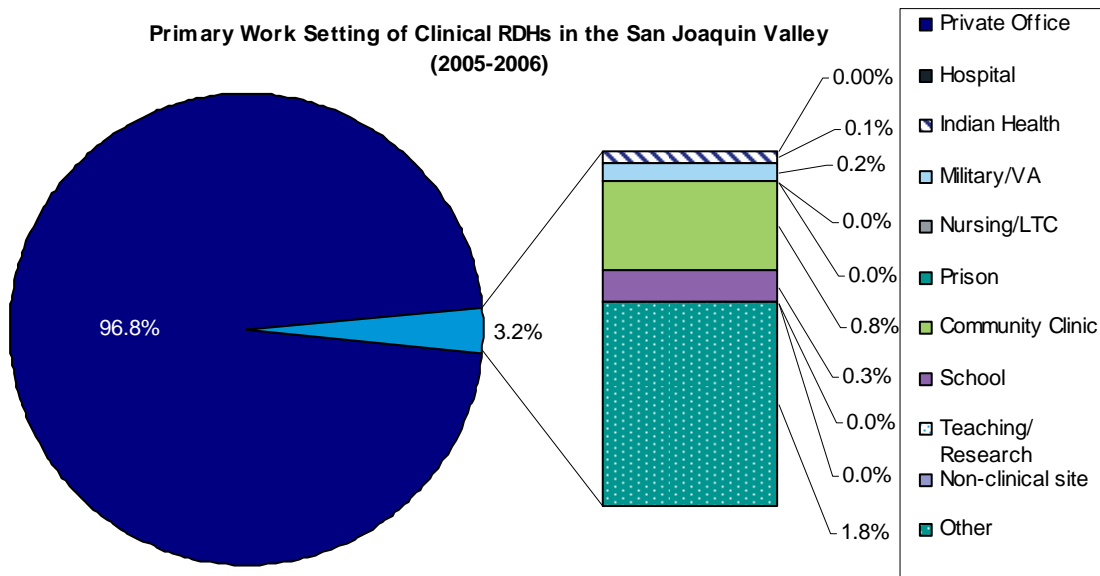


A large proportion (69.9%) of San Joaquin Valley dental hygienists report an associate degree as the highest level earned in any field, while 26.6% report having earned a baccalaureate degree, and 3.4% a masters degree or PhD. Nationally and statewide RDH educational programs are increasingly offered at the associate degree level. With the opening of a baccalaureate program in the region, this trend may be somewhat buffered but not reversed.

Practice Characteristics

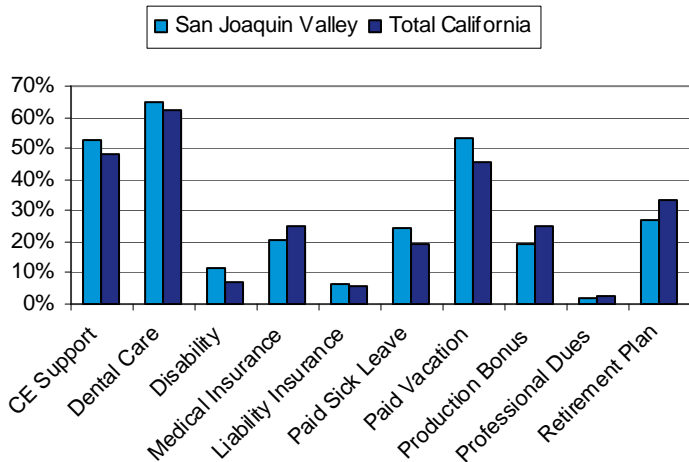
On average, RDHs in the San Joaquin Valley work 3.3 days per week, and 46.5 weeks per year, which mirrors statewide trends. Sixty-one percent work in a single setting, 30% have two practice settings, and 9% have three or more settings. San Joaquin Valley RDHs tend to stay with their practices for a long time, reporting an average of 7.6 years at their primary practice setting, and if they have them, 5.1 years at their secondary practice setting and 5.0 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research. The primary work setting of 96.8% of RDHs is a private dental office. The 3.2% of RDHs who work in an alternative setting are split between a number of public and community sites, as

shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.

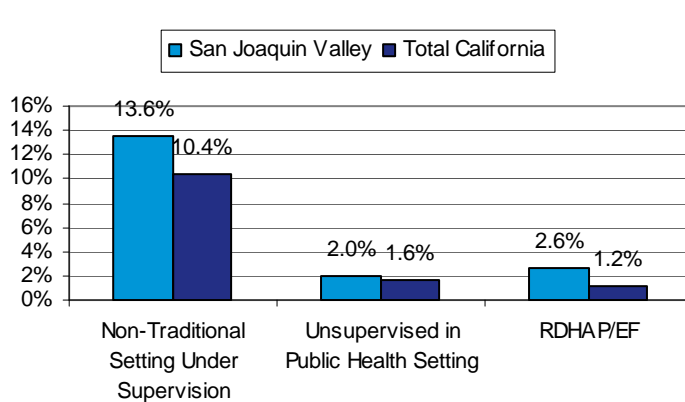


San Joaquin Valley RDHs earn on average, \$39.63 per hour, with a standard deviation of \$9.74. This is \$6.01 less than the statewide average hourly wage. The minimum RDH hourly wage reported was \$25/hour and the maximum was \$60/hour. RDHs in the San Joaquin Valley receive a mixed number of employment benefits compared to RDHs statewide.

Percent of Clinical RDH's Receiving Benefits (2005-2006)



Active RDHs in Non-Traditional Settings (2005-2006)



The San Joaquin Valley has greater than average proportions of RDHs working in non-traditional settings (outside a dental office or clinic), under supervision, unsupervised and in alternative practice, although just 1.5% of RDHs in the San Joaquin Valley are doing non-clinical work as their primary work activity. In 2005, the San Joaquin Valley had 19.8% of the State's active RDHAPs, and 19.1% of the State's active RDHEFs, yet the advanced licensees are still a small proportion of the overall hygiene workforce. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygienists in the San Joaquin Valley is very impacted. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

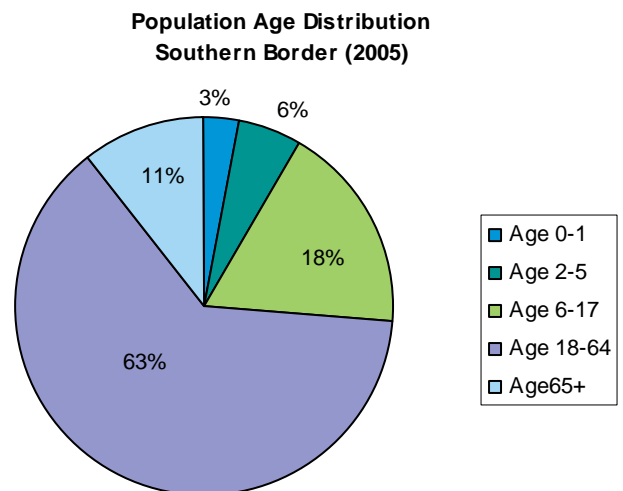
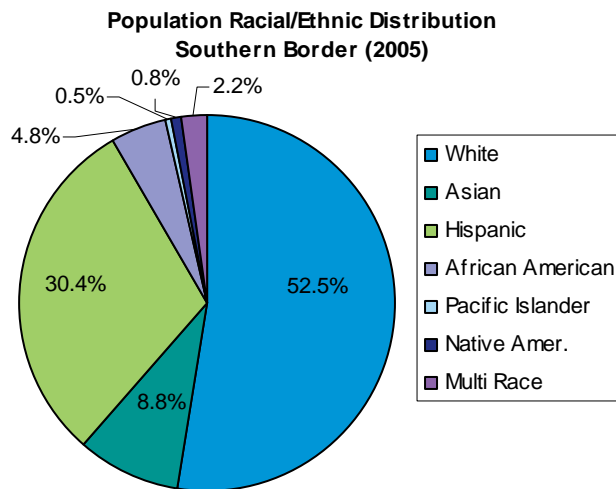
SOUTHERN BORDER REGIONAL SUMMARY

The Southern Border Region includes Imperial and San Diego counties. In 2005 there were 1045 active registered dental hygienists (RDHs) in this region.

- In 2005, the economic state of the population in the Southern Border region was better than average, the population proportion was mid-sized and equally diverse compared to the statewide population.
- The Southern Border Region has an average supply of dentists combined with a higher than average supply of hygienists, resulting in greater ratio of RDHs per dentist in the region than statewide.
- The RDH population in the region is growing more quickly than the general population and the dentist population. New graduates in the region are not projected to outpace expected retirements/exits from the workforce. Migration to and from other regions may mitigate this somewhat as the region has a very high percentage of RDHs educated out-of-state, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are about average, benefits are more prevalent, there are more RDH vacancies, a smaller perception of not enough RDHs, a greater percent of RDHs looking for work, and slightly less difficulty overall finding work, although a wide range of difficulties is reported, particularly finding a satisfactory work environment.
- The workforce in the region is less diverse and more highly educated than the RDH workforce statewide. A higher percent of RDHs in the region are working in non-traditional settings as is seen statewide.
- Overall, the labor market indicators show an average labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

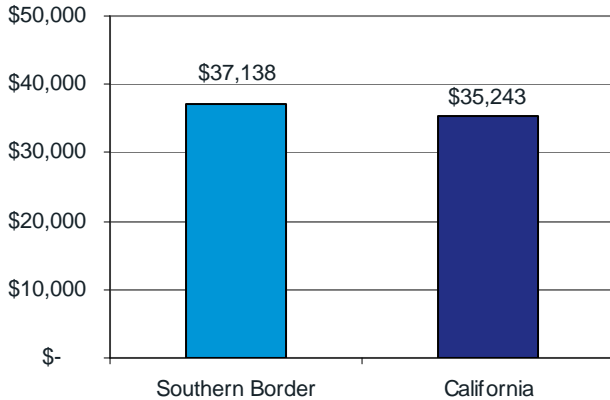
Demand for Dental Hygienists in the Southern Border

The demand for RDHs in the Southern Border Region is driven by dental offices' response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. The Southern Border has lower than average poverty rates and higher than average income compared with the state as a whole, and hence a higher than average capacity to pay for care. In 2005, the population of the Southern Border was 3,219,518 – 8.7% of the total population of the state. Compared with California as a whole, the general population in the Southern Border is similarly distributed by race/ethnicity and age.

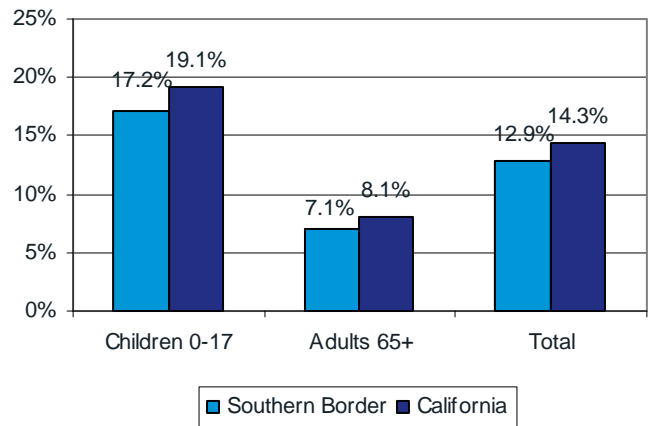


The general population in the Southern Border is growing more slowly in comparison with California as a whole, however the dentist and RDH populations are both outpacing growth in comparison with their respective populations statewide. The supply of RDHs is growing faster than population growth and outpacing the increase in the supply of dentists. There is an average supply of dentists in the region, (68.9/100,000 population) resulting from the fact that 8.6% of California's general practice dentists live in this region, compared with 8.7% of California's population.

**Per Capita Income
Southern Border (2005)**

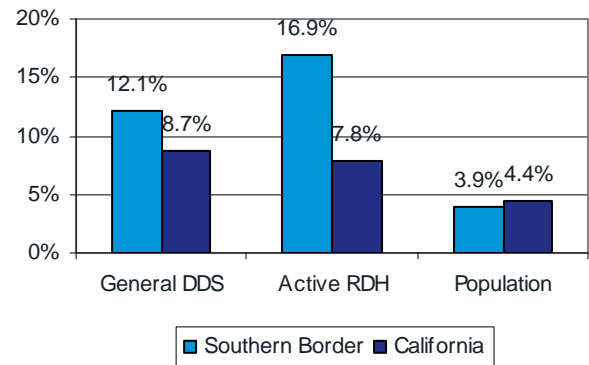


**Percent of Population in Poverty
Southern Border (2005)**

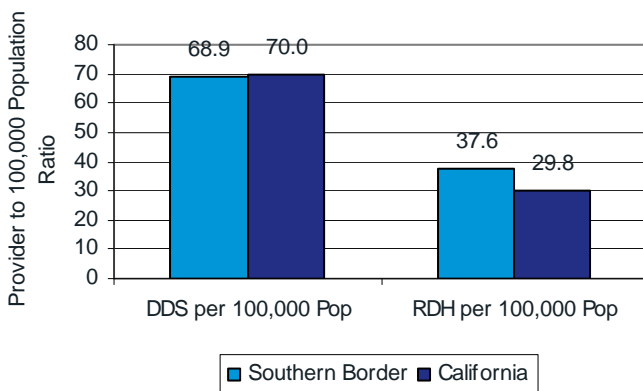


The Southern Border's RDH population increased 16.9% in the past three years, and the Southern Border still has a greater share (11.0%) of the State's RDH population than total population, resulting in a ratio of 37.6 RDH per 100,000 population. The Southern Border has 0.55 hygienists per dentist, slightly greater than the statewide average of 0.43. Despite the growth in the RDH population, there are greater proportions of reported RDH vacancies in Southern Border dental practices than reported statewide. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

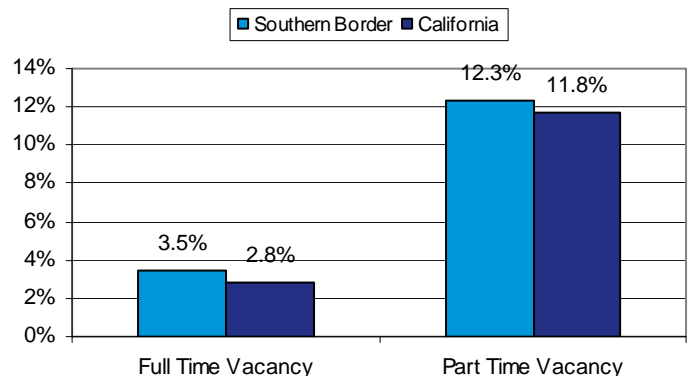
Percent Increase of General DDS, Active RDH and Population, Southern Border (2002-2005)



**Dentists and Hygienists per 100,000 Population
Southern Border (2005)**



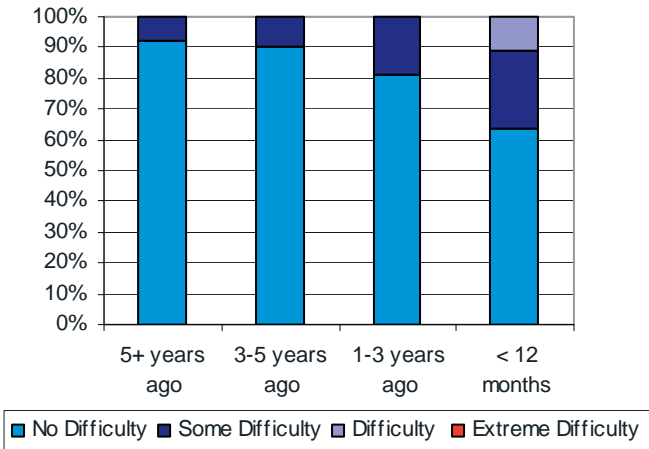
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



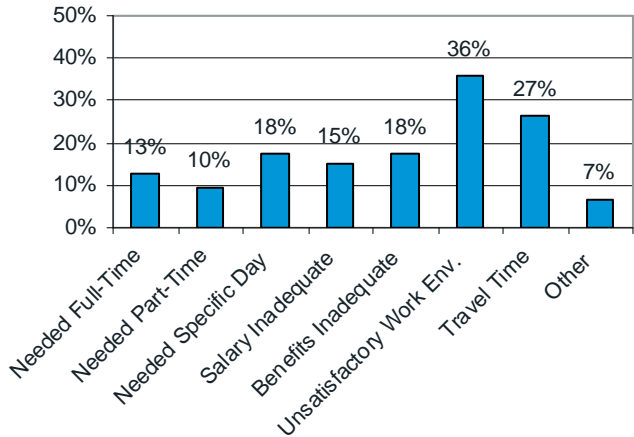
Between 2000 and 2005 the dental hygiene labor market in the Southern Border experienced a less severe contraction than was noted statewide. In 2005, 14.5% of Southern Border RDHs reported they were actively looking for work and on average were looking for 10.8 additional hours of work.

The level of difficulty finding employment encountered in the Southern Border has increased in recent years, with 36.2% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, 36% reported not being able to find a satisfactory work setting, while 27% reported travel time as a difficulty. Southern Border RDHs report a mixed perception of supply of RDHs in the Southern Border, with 71.6% reporting an adequate supply, 11.7% reporting too many, and 16.6% reporting not enough. Southern Border RDHs are less likely to report a perception of “too many” RDHs than are RDHs statewide.

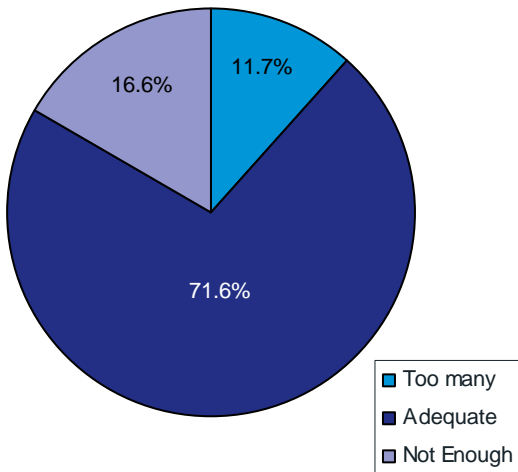
Clinical RDHs Level of Difficulty Finding Employment When Last Sought Southern Border (2005-2006)



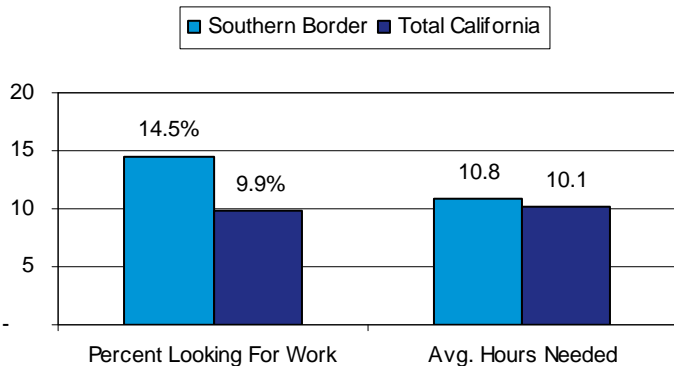
Type of Difficulty Encountered Finding Employment in the Last 12 Months Southern Border Clinical RDHs (2005-2006)



Clinical RDHs Opinion of Local Community Supply of RDHs: Southern Border (2005-2006)



Percent of Clinical RDHs Actively Looking for Work and Average Hours of Work Needed (2005-2006)

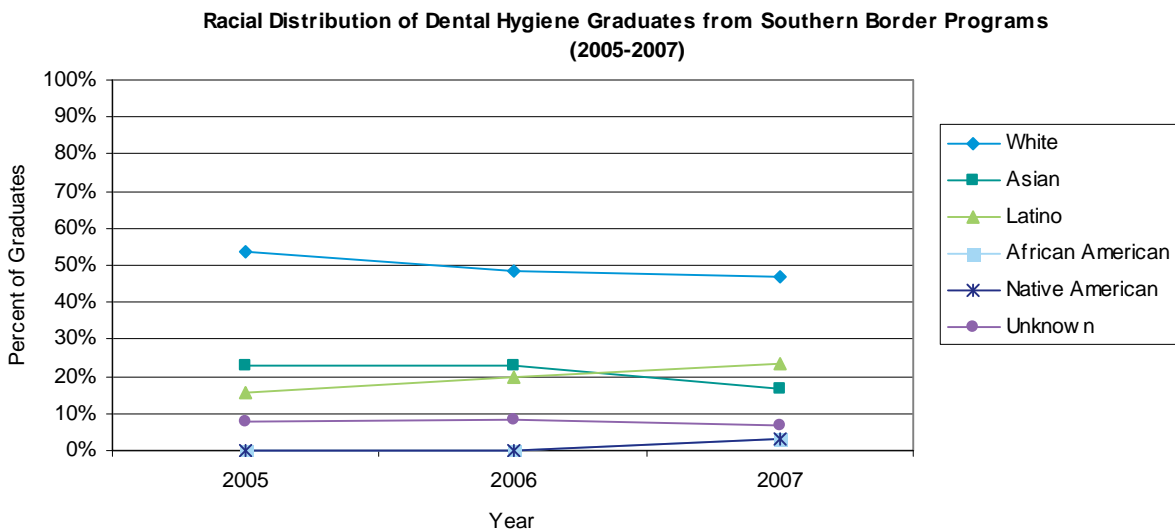
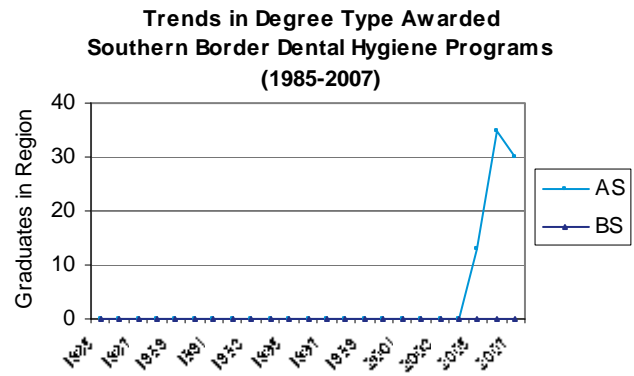
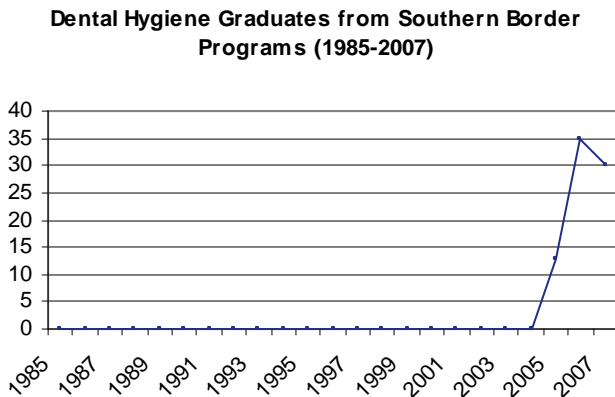


The Supply of Dental Hygienists in the Southern Border

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

Inflow of Hygienists

The Southern Border has one dental hygiene program, Southwestern College, which began graduating students in 2005. In 2007, the Southern Border region produced 5.8% of all statewide graduates.



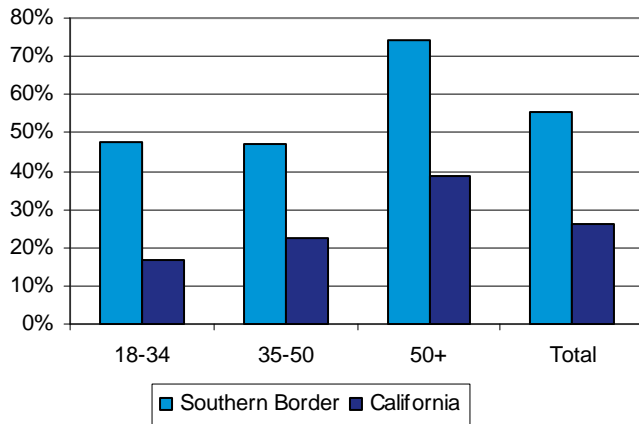
The RDH workforce is becoming increasingly diverse. In 2007 less than 50% of the graduates from the Southern Border were white. Ten percent of the graduates in the Southern Border are men, compared to 7% statewide.

Another source of labor market supply is migration. In the Southern Border, 55.4% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 47.4% of practicing RDHs in the Southern Border were first licensed out-of-state, compared to 22.6% statewide. The Southern Border has a much higher proportion of out-of-state educated RDHs compared to California overall.

Outflow of Hygienists

A number of Southern Border RDHs (3.8%) report they plan to leave the workforce in the next 2 years (about 40 individuals), and another 18.1% plan to leave in 2-5 years (189 individuals). There are currently 30 graduates annually in the region, and if they all remain employed in the Southern Border over the five years there would be 150 entrants, with 229 exits, a slight decrease overall. Projected out ten years, with existing graduates and an additional 33.7% of the current workforce exiting, the region would experience a decrease of 281 hygienists, a 27% drop from current supply. The caveats to this projection are that an assumption of full retention is unlikely to hold, in and out migration is unaccounted for, and reported expectations of retirement may not translate into actual exits.

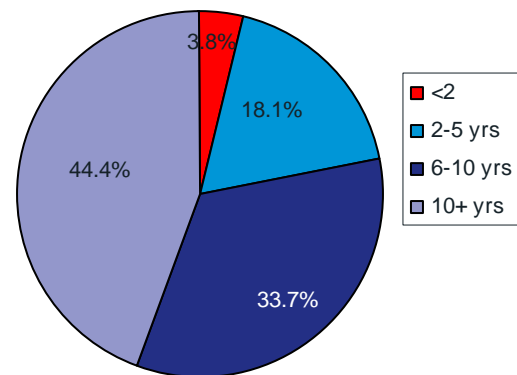
Percent of Active RDHs Educated Out-Of-State by Age, Southern Border and California (2005-2006)



The proportion of actively licensed RDHs in the Southern Border who are currently not working is similar to the statewide average (16.1% vs. 16.6%). The primary reasons reported for being out of the workforce were change of career (20.8%), retirement (18.9%), and family responsibilities for children (13.0%). Of the hygienists not working due to childrearing responsibilities, 100% planned to return to work. Of all RDHs not currently working, 43.2% expect to return to work.

Less than 3% of RDHs in the Southern Border are enrolled in an education program. Of this small group, just over half are enrolled in an RDHAP program, with the rest enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. Just under one-fifth of RDHs in the Southern Border suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

Clinical RDHs Reported Years Left in Practice Southern Border (2005-2006)

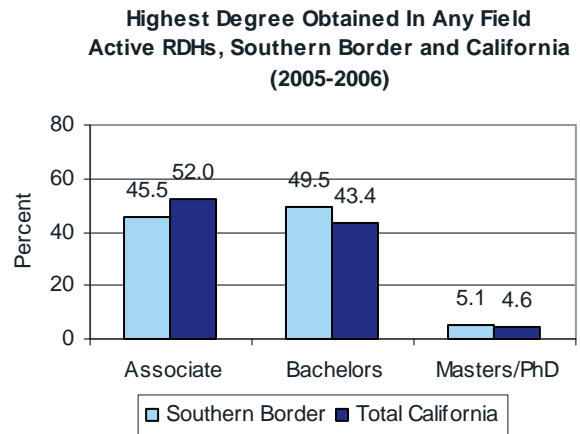
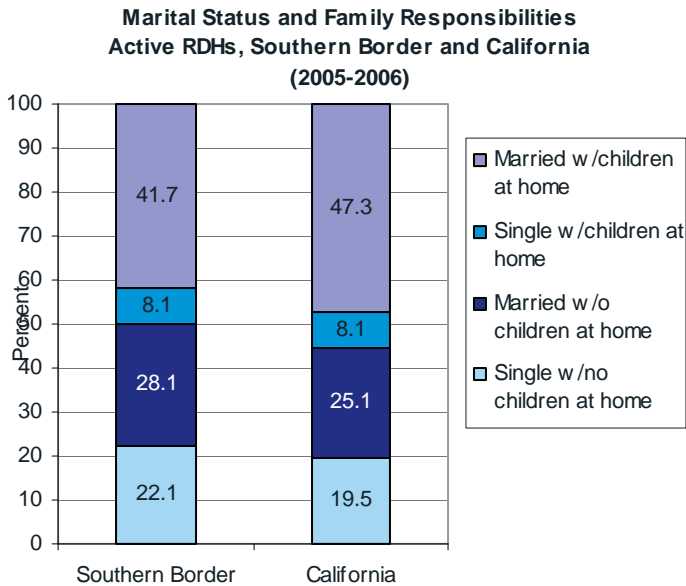
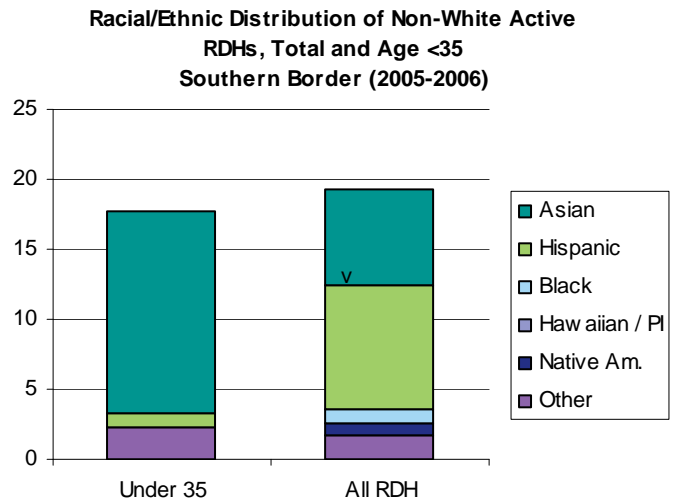
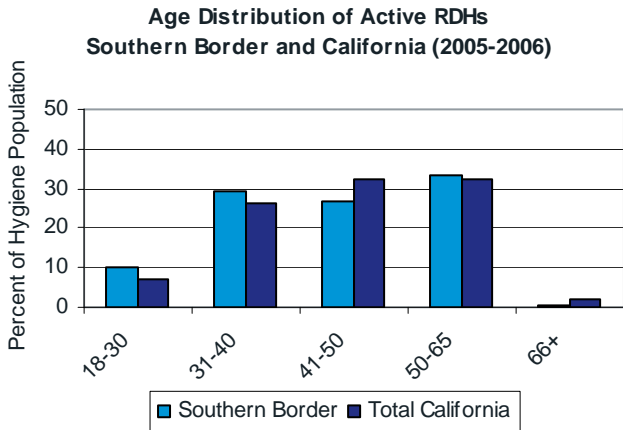


Southern Border Dental Hygiene Labor Market

Demographics & Educational Level

The average age of a RDH in the Southern Border is 43.6 years, slightly younger than the statewide average age of 44.7 years. The marital status of Southern Border RDHs generally mirrors the statewide distribution. The gender composition is still heavily female, with males constituting only 2.4% of RDHs in the Southern Border. The RDH workforce in the Southern Border seems to be decreasing in racial/ethnic diversity, primarily due to a decrease in Hispanic hygienists. Just under 20% of all RDHs report a non-white race/ethnicity. Just over one-quarter (27.0%) of RDHs in the Southern Border report the ability to functionally communicate with their patients in a language other than English.

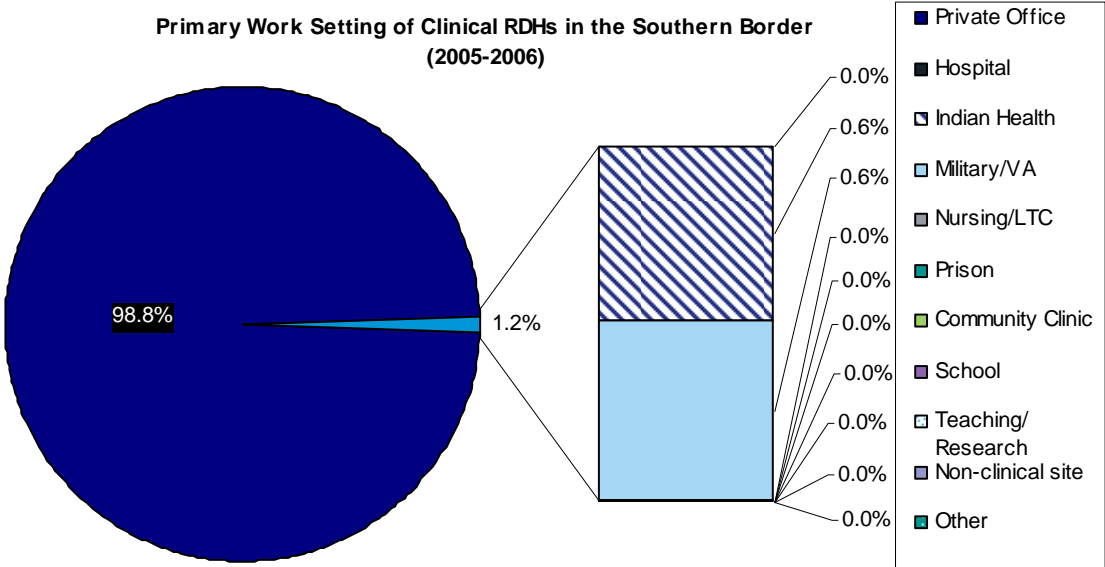
Under half (45.5%) of Southern Border dental hygienists report an associate degree as the highest level earned in any field, while 49.5% report having earned a baccalaureate degree, and 5.1% a masters degree or PhD.



Practice Characteristics

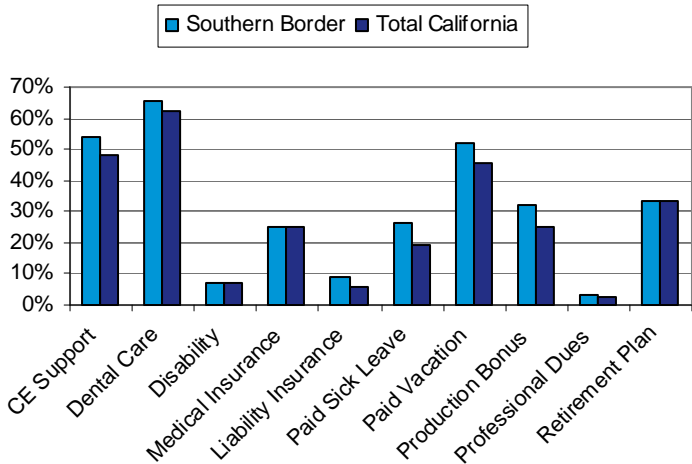
On average, RDHs in the Southern Border work 3.4 days per week, and 46.7 weeks per year, which mirrors statewide trends. Sixty-seven percent work in a single setting, 27% have two practice settings, and 6% have three or more settings. Southern Border RDHs tend to stay with their practices for a long time, reporting an average of 7.3 years at their primary practice setting, and if they have them, 6.3 years at their secondary practice setting, and 5.6 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research.

The primary work setting of 98.8% of RDHs is a private dental office. The 1.2% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure below. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.

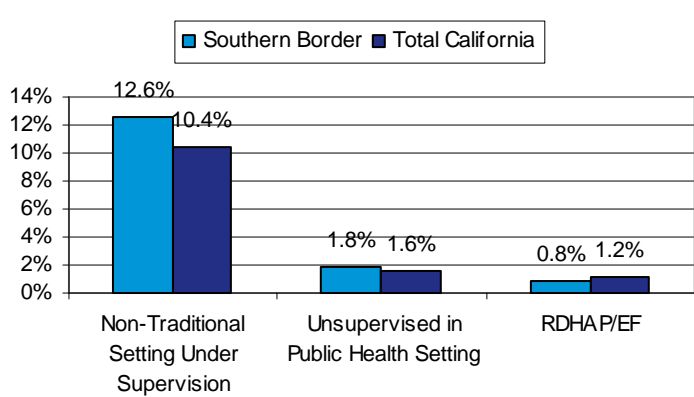


Southern Border RDHs earn on average, \$45.13 per hour, with a standard deviation of \$10.39. This is \$0.51 less than the statewide average hourly wage. The minimum RDH hourly wage reported was \$28/hour and the maximum was \$64/hour. RDHs in the Southern Border also are more likely to receive a number of employment benefits than are RDHs statewide.

Percent of Clinical RDH's Receiving Benefits (2005-2006)



Active RDHs in Non-Traditional Settings (2005-2006)



The Southern Border has greater than average proportion of RDHs working in non-traditional settings (outside a dental office or clinic) under supervision and unsupervised in a public health setting, but a less than average proportion working as RDHAPs. Less than one percent of RDHs in the Southern Border are doing non-clinical work as their primary work activity. In 2005, the Southern Border had 7.9% of the State's active RDHAPs, and none of the State's active RDHEFs, yet RDHAPs and RDHEFs were still a small proportion of the overall hygiene workforce. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in the Southern Border is mixed but about average within the state. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

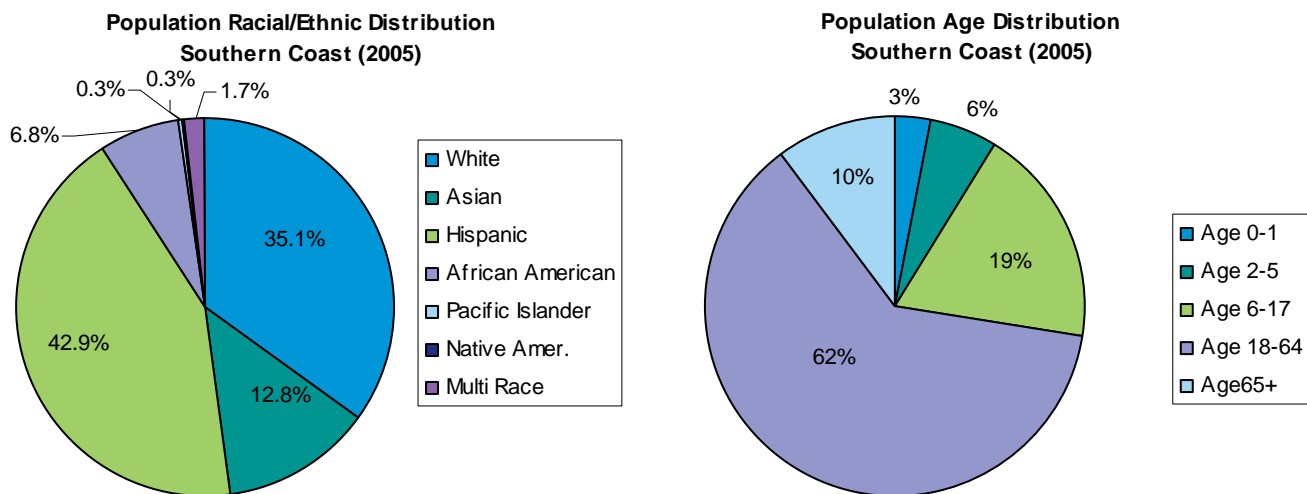
SOUTHERN COAST REGIONAL SUMMARY

The Southern Coast Region includes the following counties: Los Angeles, Orange and Ventura. In 2005 there were 3498 active registered dental hygienists (RDHs) in this region.

- The economic conditions of the Southern Coast region are mixed and the population is the largest and most diverse in the state.
- The Southern Coast has a higher than average supply of dentists combined with a lower than average supply of hygienists, resulting in fewer RDHs per dentist in the region than statewide.
- The RDH population in the region is growing more quickly than the general population, but less quickly than the dentist population. In addition, new graduates in the region are not projected to keep up with expected retirements/exits from the workforce. In-migration from other regions may mitigate this somewhat, although the percentages of in and out migration are unknown.
- Compared to the state as a whole, wages in the region are average (although benefits seem to be less prevalent), there are more part-time RDH vacancies, a greater perception of not enough RDHs, fewer RDHs looking for work, and there is less difficulty overall finding work, although a wide range of difficulties is reported.
- The workforce in the region is more diverse, younger and more highly educated than the RDH workforce statewide. A similar percent of RDHs in the region are working in non-traditional settings as is seen statewide.
- Overall, the labor market indicators show a better than average labor market in 2005 for dental hygienists in the region. Ultimately, with uneven employment patterns of RDHs by dentists, and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

Demand for Dental Hygienists in the Southern Coast

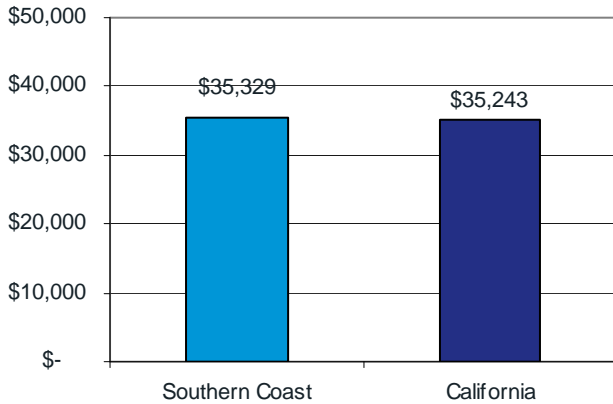
The demand for RDHs in the Southern Coast is driven by dental offices' response to the demand for dental care by the population. Population trends ultimately drive the need for dental services; however the supply of general practice dentists, the primary employer of RDHs, is a key indicator determining demand for dental hygienists. The Southern Coast has higher than average poverty rates and average income compared with the state as a whole, and hence a lower capacity to pay for care. In 2005, the population of the Southern Coast was 14,089,019 – 38.1%% of the total population of the State. Compared with California as a whole, the general population in the Southern Coast consists of a larger proportion of the Hispanic population, but similar overall age distribution.



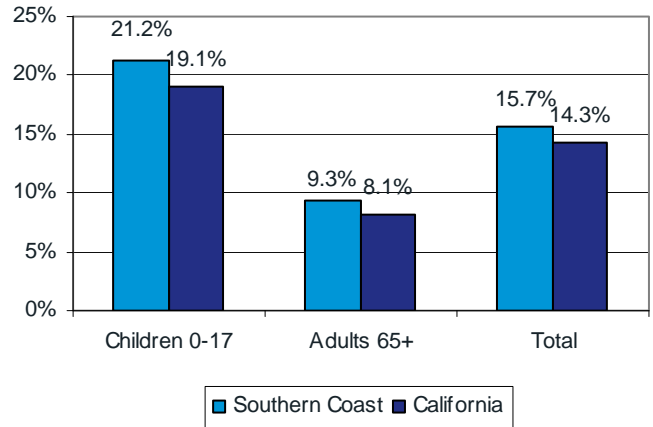
The general population, dentist population and RDH population in the Southern Coast are growing more slowly than their respective populations in California as a whole. The supply of RDHs is outpacing overall

population growth, but it is not keeping pace with the rate of growth of dentists. There is a large supply of dentists in the region, (74.1/100,000 population) resulting from the fact that 40.4% of California's general practice dentists live in this region, compared with 38.1% of California's population.

**Per Capita Income
Southern Coast (2005)**

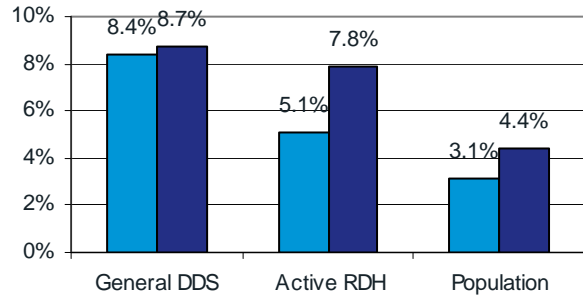


**Percent of Population in Poverty
Southern Coast (2005)**

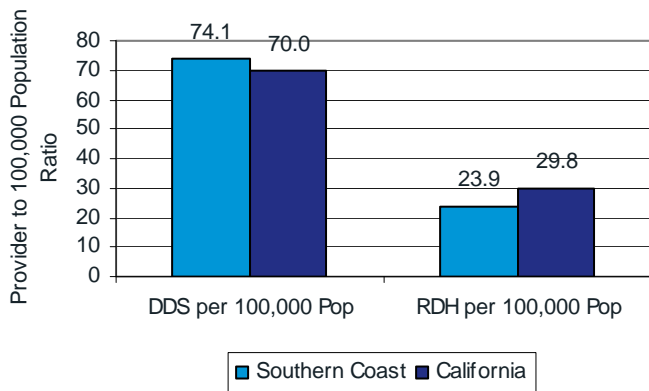


The Southern Coast's RDH population increased 5.1% in the past three years, yet the Southern Coast still has a smaller share (30.6%) of the State's RDH population than total population, resulting in a ratio of 23.9 RDH per 100,000 population. The Southern Coast has 0.32 hygienists per dentist, less than the statewide average of 0.43. There are fewer reported full-time but greater reported part-time RDH vacancies in Southern Coast dental practices than reported statewide. Note that vacancies were reported by RDHs not dentists, therefore only reported for dental practices where RDHs are currently employed, not necessarily for all dental practices.

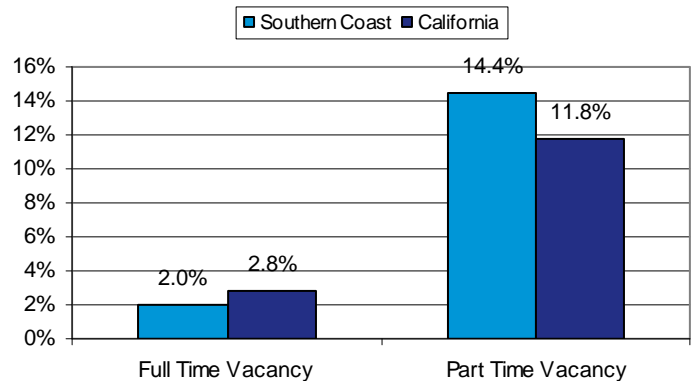
Percent Increase of General DDS, Active RDH and Population, Southern Coast (2002-2005)



**Dentists and Hygienists per 100,000 Population
Southern Coast (2005)**



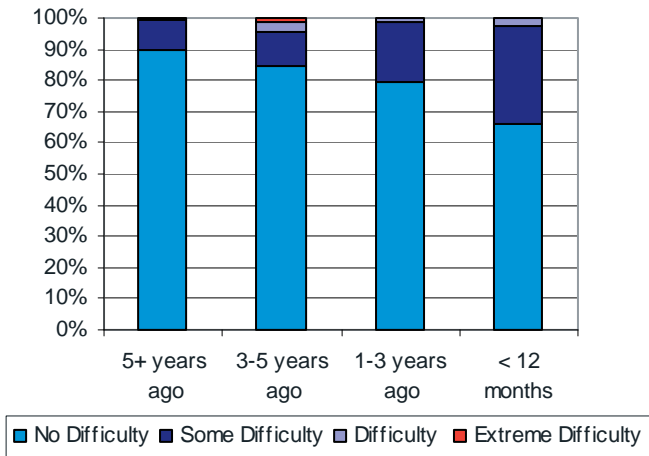
Percent of Clinical RDH's Reporting One or More RDH Vacancies in their Primary Practice (2005-2006)



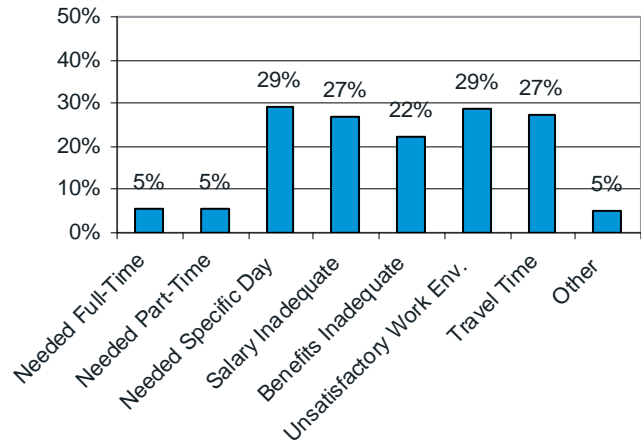
Between 2000 and 2005 the dental hygiene labor market in the Southern Coast experienced a similar, but less severe, contraction as was noted statewide. In 2005, 6.2% of Southern Coast RDHs reported they were actively looking for work and on average RDHs were looking for 9.9 additional hours of work.

The level of difficulty finding employment encountered in the Southern Coast has increased in recent years, with 35% of hygienists looking for work in the past 12 months reporting *some to extreme* difficulty in finding work. Of those having difficulty finding employment in the last 12 months, 29% reported that they were seeking work on one specific day and could not find it, with the same percent reporting unsatisfactory work settings. Travel time and inadequate salary were reported as difficulties encountered by 27% of RDHs respectively. Southern Coast RDHs report a mixed perception of supply of RDHs in the Southern Coast, with 68.5% reporting an adequate supply, 5.6% reporting too many, and 25.9% reporting not enough. Southern Coast RDHs are five times more likely to report a perception of “not enough” RDHs than “too many” RDHs in their region.

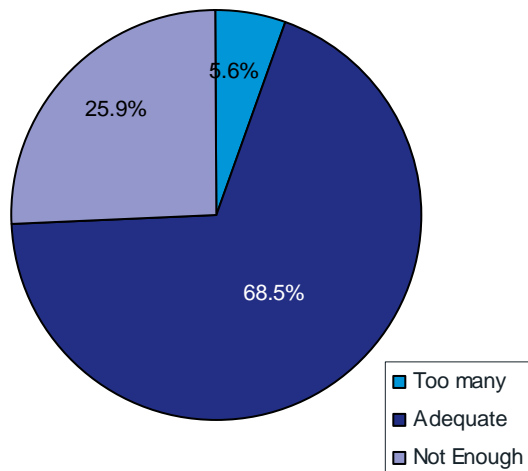
Clinical RDH's Level of Difficulty Finding Employment When Last Sought Southern Coast (2005-2006)



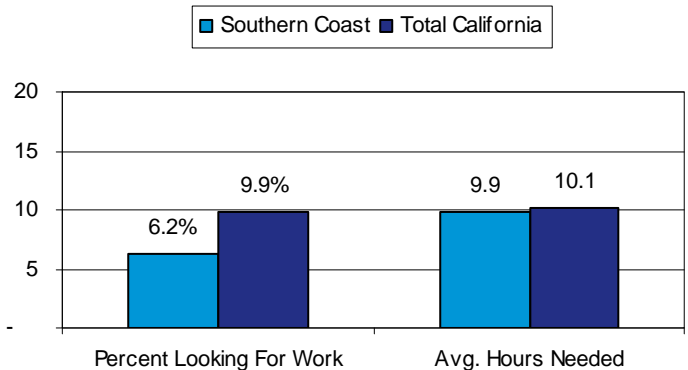
Type of Difficulty Encountered Finding Employment in the Last 12 Months Southern Coast Clinical RDHs (2005-2006)



Clinical RDHs Opinion of Local Community Supply of RDHs: Southern Coast (2005-2006)



Percent of RDHs Actively Looking for Work and Average Hours of Work Needed (2005-2006)



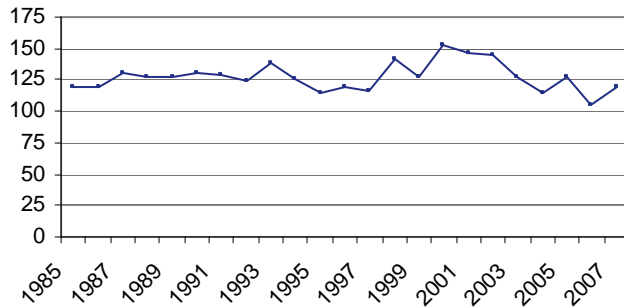
The Supply of Dental Hygienists in the Southern Coast

The local supply of dental hygienists is impacted by the number of new graduates in the region who are licensed, by migration into and out of the region of licensed providers, and exits from the occupation for reasons such as retirement or change of career.

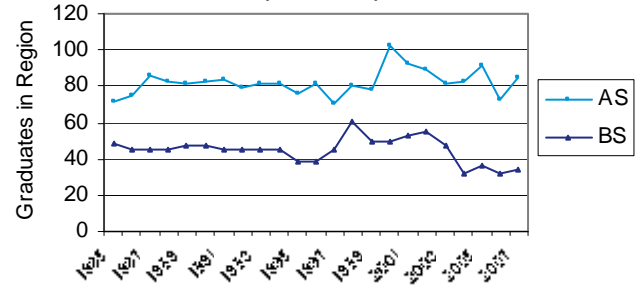
Inflow of Hygienists

The Southern Coast has seven dental hygiene programs: Cerritos College, Cypress College, El Camino Community College (closed in 1999), Oxnard College (graduated first class in 2000), Pasadena City College, University of Southern California (USC), and West Los Angeles College. In 2007, the Southern Coast produced 22.8% of all statewide graduates. USC offers one of three baccalaureate programs in the state, and the West Los Angeles College offers one of two RDHAP programs in the state.

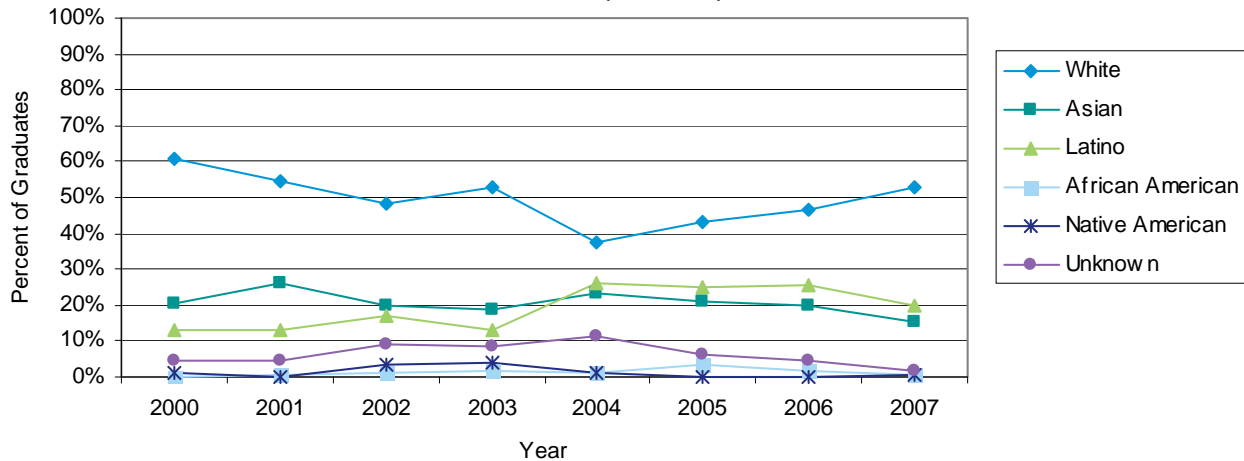
Dental Hygiene Graduates from Southern Coast Programs (1985-2007)



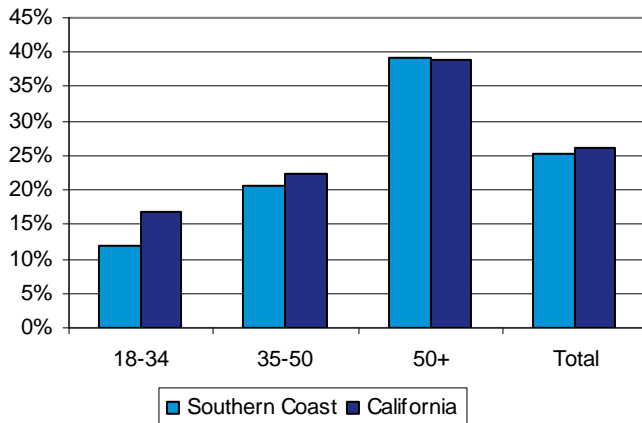
Trends in Degree Type Awarded Southern Coast Dental Hygiene Programs (1985-2007)



Racial Distribution of Dental Hygiene Graduates from Southern Coast Programs (2000-2007)



Percent of Active RDHs Educated Out-Of-State by Age, Southern Coast and California (2005-2006)



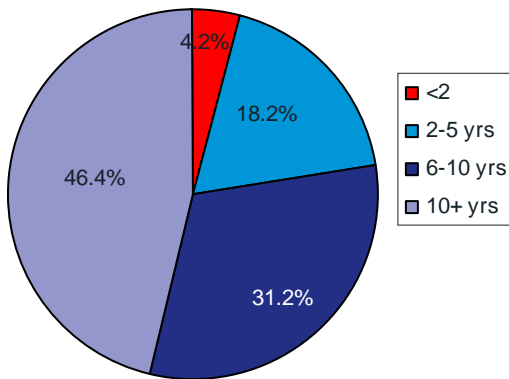
The RDH workforce is becoming increasingly diverse. In 2007, 53% of the region's graduates were white, down from 61% in 2000. In the Southern Coast, 13% of the graduates are men, compared to 7% statewide. Another source of labor market supply is migration. In the Southern Coast, 25.3% of active RDHs received their dental hygiene degree outside California compared to 26.2% statewide. Similarly, 19.1% of practicing RDHs in the Southern Coast were first licensed out-of-state, compared to 22.6% statewide. Younger RDHs are less likely to be educated out-of-state than older RDHs, however the Southern Coast tends to have a similar proportion of out-of-state educated RDHs as compared to California overall.

Outflow of Hygienists

A number of Southern Coast RDHs (4.2%) report they plan to leave the workforce in the next 2 years (about 147 individuals), 18.2 in 2-5 years (636 individuals). There are currently 119 graduates annually in the region, if they all remain employed in the Southern Coast over the five years there would be 595 entrants, with 783 exits, an overall decrease in numbers. Projected out ten years, with existing graduates and an additional 31.2% of the current workforce exiting, the region would experience a decrease of 594 hygienists, a 17% drop from current supply.

The proportion of actively licensed RDHs in the Southern Coast who are currently not working is similar to the statewide average (16.0% vs. 16.6%). The primary reasons reported for being out of the workforce were family responsibilities for children (25.5%), job disability or other health reasons (25.0%) and change of career (18.6%). Of the hygienists not working due to childrearing responsibilities, 45% planned to return to work. Of all RDHs in the region not currently working, 25% expect to return to work.

Clinical RDHs Reported Years Left in Practice
Southern Coast (2005-2006)



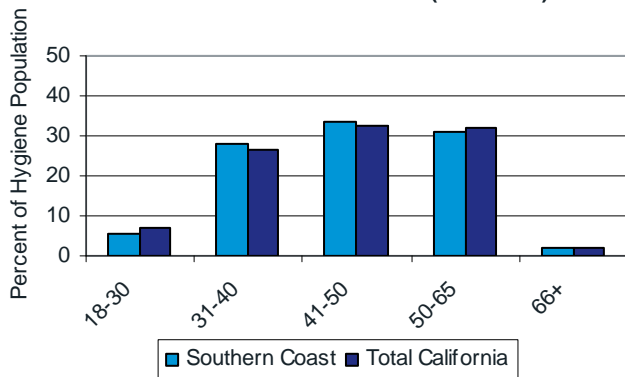
Less than 3% of RDHs in the Southern Coast are enrolled in an education program. Three quarters of this small group is enrolled in a non-dental educational program which may ultimately lead to their leaving the profession. The rest are enrolled either in an RDHAP or dental education program. Just under one-quarter of RDHs in the Southern Coast suggest they are interested in pursuing a RDHAP or RDHEF licensure, which might take them out of the workforce temporarily (and for the RDHAPs, may take them out of a traditional dental hygiene practice).

Southern Coast Dental Hygiene Labor Market

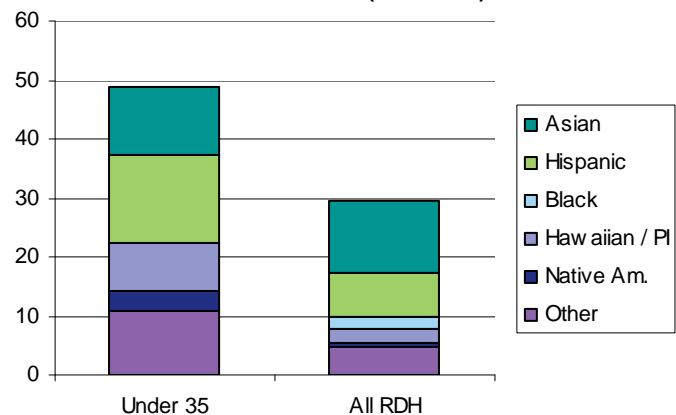
Demographics & Educational Level

The average age of a RDH in the Southern Coast is 45.0 years, slightly older than the statewide average age of 44.7 years. The marital status of Southern Coast RDHs generally mirrors the statewide distribution.

Age Distribution of Active RDHs
Southern Coast and California (2005-2006)

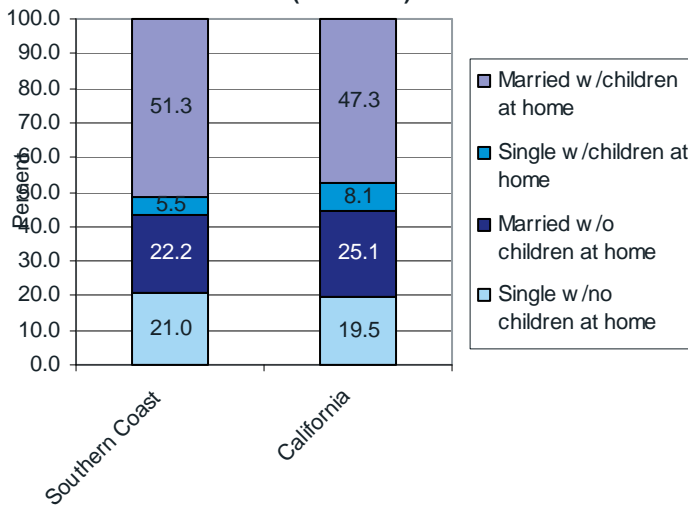


Racial/Ethnic Distribution of Non-White Active RDHs, Total and Age <35
Southern Coast (2005-2006)

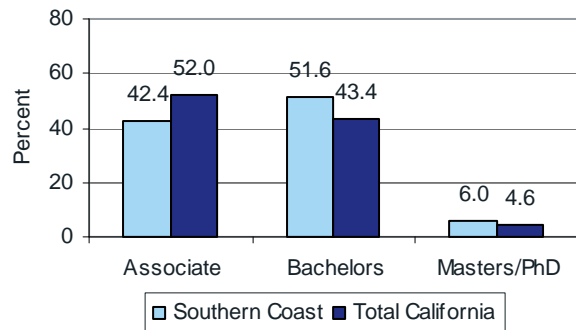


The gender composition is still heavily female, with males constituting only 2.5% of RDHs in the Southern Coast. The RDH workforce in the Southern Coast is increasingly racially/ethnically diverse. Non-white minority groups represent almost half of RDHs under the age of 35, compared to 30% of all RDHs in the Southern Coast. Just about one-third (32.7%) of RDHs in the Southern Coast report the ability to functionally communicate with their patients in a language other than English. Under half (42.4%) of Southern Coast dental hygienists report an associate degree as the highest level earned in any field, while 51.6% report having earned a baccalaureate degree, and 6.0% a masters degree or PhD.

Marital Status and Family Responsibilities
Active RDHs, Southern Coast and California
(2005-2006)



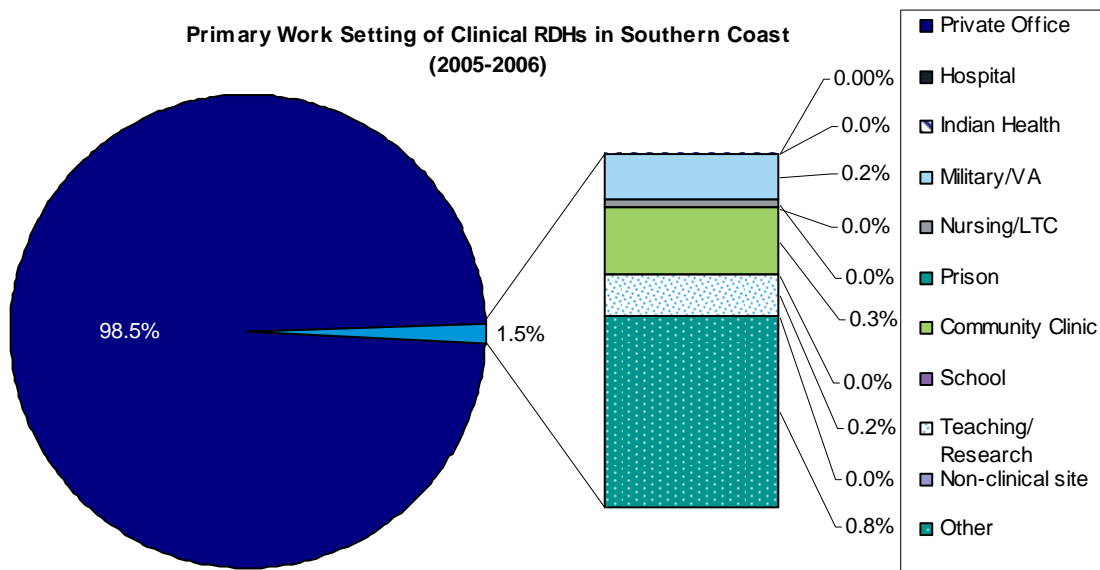
Highest Degree Obtained In Any Field
Active RDHs, Southern Coast and California
(2005-2006)



Practice Characteristics

On average, RDHs in the Southern Coast work 3.4 days per week, and 46.0 weeks per year, which mirrors statewide trends. Fifty percent work in a single setting, 35% have two practice settings, and 15% have three or more settings. Southern Coast RDHs tend to stay with their practices for a long time, reporting an average of 10.4 years at their primary practice setting, and if they have them, 7.2 years at their secondary practice setting and 7.0 years at their third practice setting. The vast majority of weekly hours are spent providing patient care or doing administrative functions, with very few working in public health, teaching, or research.

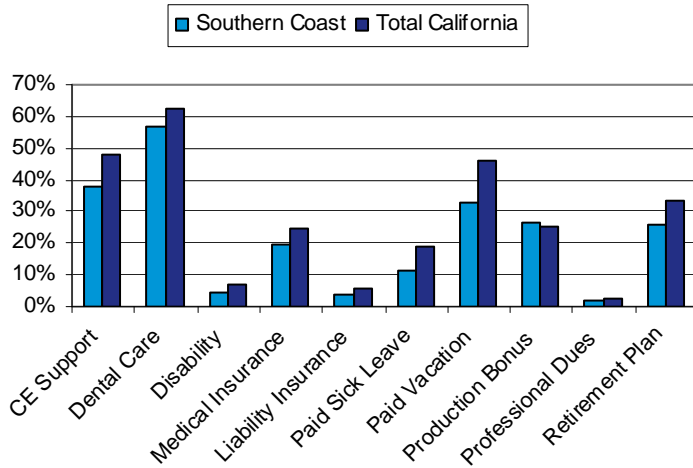
Primary Work Setting of Clinical RDHs in Southern Coast
(2005-2006)



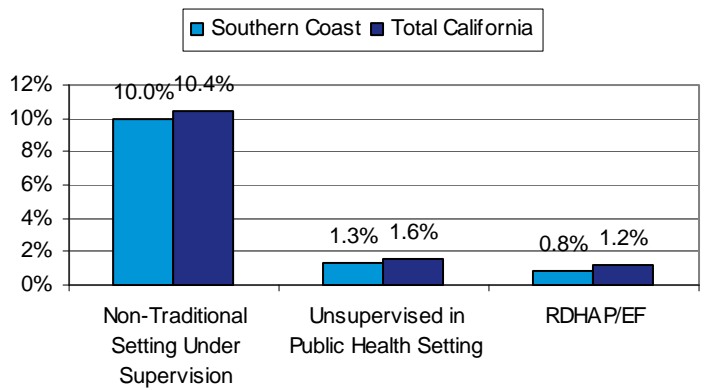
The primary work setting of 98.5% of RDHs is a private dental office. The 1.5% of RDHs who work in an alternative setting are split between a number of public and community sites, as shown in the figure above. Second and third work settings are more likely to be non-private practice, yet are still a small proportion of all work settings.

Southern Coast RDHs earn on average, \$45.02 per hour, with a standard deviation of \$16.87. This is \$0.62 less than the statewide average hourly wage. The minimum RDH hourly wage reported was \$27.50/hour and the maximum was \$85/hour. RDHs in the Southern Coast also are less likely to receive most employment benefits than are RDHs statewide.

Percent of Clinical RDH's Receiving Benefits (2005-2006)



Active RDHs in Non-Traditional Settings (2005-2006)



The Southern Coast has fewer than average RDHs working in non-traditional settings (outside a dental office or clinic) supervised, unsupervised or as an RDHAP/EF. Only 1.6% of RDHs in the Southern Coast are doing non-clinical work as their primary work activity. In 2005, the Southern Coast had 22.8% of the State's active RDHAPs, and 19.1% of the State's active RDHEFs, yet advanced licensees were still a small proportion of the overall hygiene workforce. There has been a doubling of the RDHAP population since the survey, and the current distribution is unknown.

In summary, the labor market for dental hygiene in the Southern Coast is better than average. Ultimately, with uneven employment patterns by dentists and changing work patterns desired by RDHs, the regional labor market will remain complex and variable.

METHODOLOGY

The data used to produce the following report were taken from five sources.

1. All data reported on the dental hygiene workforce except the educational trend data are from the Center for the Health Professions 2005-2006 Statewide Sample Survey of Dental Hygienists. The survey was developed from information gathered from a literature review as well as from interviews from an expert group of stakeholders, including researchers, policy makers, dental professionals and educators. A draft version was piloted to a random selection of 30 licensed hygienists stratified into two groups by whether they were in an urban setting - San Francisco (15 for an in-person focus group) or in a rural or frontier community (15 for a phone interview). The final stratified sample was pulled from a license file of all RDH / APs / EFs obtained from the California Department of Consumer Affairs in August 2005. For RDHs, only those with a California address were included. Duplicate AP and EF listing in the RDH file were removed. Those chosen for the pilot were removed prior to pulling the sample. All RDHAPs and RDHEFs were surveyed. The RDH file was geocoded and matched to rural-urban commuting codes (RUCAs)⁹ to stratify the sample of RDHs. Ninety-eight percent of the records matched with 282 missing a zip match. Of those that matched, 91% were in urban RUCAs while 9% were in rural RUCAs. Every RDH with an address in a small town or rural RUCA (codes 4-11) were sampled, while 20% of the RDHs with an urban address (RUCA code 1-3) or a missing RUCA were randomly sampled. The final sample selection resulted in 3,802 records. In the process of survey follow-up we verified that 51 people were ineligible and were removed. The final eligible sample selection was 3751. The overall response of 2776 translates to a response rate of 73%. The final data were weighted to adjust for sampling and response bias, post stratification issues, regional variation, graduation date, and association membership status.
2. The counts of dentists were taken from the California Dental Board License File, 2005 Active Practitioners.
3. The UCLA Center for Health Policy Research¹⁰ conducted a statewide survey of dentists in 2002. The growth of dentists and hygienists was computed by comparing 2005 count of dentist by county¹¹ to the baseline reported 2002 counts of general practice dentists (including pediatric dentists) and all hygienists by county. The total 2005 dentist count was reduced to the estimated number in general practice using the ratios by county computed in 2002 report.
4. Demographic data on the California population was taken from California Department of Finance data tables D-9 (Per Capita Income), D-21 (Median Income and Poverty Status), and Table: Race, Gender and Age Data. Source data can be found at: <http://www.dof.ca.gov/HTML/DEMOGRAP/Data/RaceEthnic/Population-00-0/documents/2005.xls>.
5. Dental hygiene education trends were computed from the U.S. Department of Education's National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS) 2000-2007. Complete data were unavailable and several years' data had to be imputed based on previous years' data, possibly affecting the Bay Area and Southern Coast Region's estimates of race/ethnicity over time.

⁹ For full definition see: <http://depts.washington.edu/uwruca/>

¹⁰ Pourat, N et al., "Findings from the 2003 California Dental Survey" UCLA Center for Health Policy Research. Nov 2005.

¹¹ CA Dental Board License File, 2005 - Active Practitioners

STUDY LIMITATIONS

This study has a number of limitations which should be noted. There is no direct measure of demand for RDHs so numbers of private practice dentists and population data, particularly economic data, were used as proxies for looking at relative demand by region of the state. As well, it should be noted that the focus of this report is on the supply and demand for dental hygienists, so issues of access to care such as utilization rates, insurance coverage rates, and oral health status are not included. The need for dental hygiene care and demand for this care as mediated by the employment of dental hygienists are two different, albeit interrelated, issues. This report is not intended to address health status or disparities within the regional populations. The regions themselves were adapted from the California Economic Strategy Panel Regions, and are an imperfect way to define the dental hygiene labor market. There may be variation within regions that is not measured in this report, just as there is variation between regions that is, as the urban and rural geographic variances in some regions is quite large. Finally, the license data used to compute dentist supply does not provide any measure of specialty, hours or geographic locations of practice of dentists. This data does not provide estimates of expected retirements in a region for dentists. It also does not provide information on what percent of dentists in the region employ RDHs or how what number of FTE RDHs they employ. The licensed address was used to assign dentists to a region, and likely the overall counts are an over-estimate of the number of dentists providing services in a region.

DEFINITION OF TERMS

Active RDH: RDH in California reporting that they are actively working as an RDH in 2005

Clinical RDH: Active RDH in California reporting that they work primarily in a clinical practice (as opposed to doing public health or other non-clinical hygiene work)

DDS: Licensed Dentists in California

General Practice Dentists (GPD): Estimated number of dentists in general or pediatric practice

Non-Traditional Practice: Any dental practice not in a traditional private practice office or dental clinic.

Registered Dental Hygienists (RDH): All registered dental hygienists (RDH) living in California with an active license



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