THE CENTER
FOR THE HEALTH PROFESSIONS
University of California, San Francisco

Diversity in California's Health Professions: Dentistry

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A report of the California Health Workforce Tracking Collaborative
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Introduction

This issue brief is one in a series of briefs presenting a profile of California's current and projected population, selected health professions, and trended data describing selected health professions education programs in the state. In this brief we present data describing key characteristics of the state's dentistry (DDS) labor force including age, gender, race/ethnicity and income, and trended enrollment data describing gender and race/ethnicity for first-year enrollments in California's five DDS programs.

California's Current & Projected Population

California has become one of the most racially and ethnically diverse states in the country, and is projected to become even more so in the coming decades. Roughly 53% of California's population in the year 2000 was non-White.[1] By 2006 this proportion had grown to approximately 57%.[2] Population projections suggest that by the year 2030, two-thirds of the state's population will be non-White.[3] Over the next 25 years the state's population is projected to grow by roughly 12 million people. Over 90% of this population growth is projected to occur among California's Latino (75%) and Asian (17%) populations.[3] These dramatic changes underscore the need to address the lack of racial and ethnic diversity among key health professions in the state.

Active Dentists in California

The following tables present estimates describing active dentists[4] in California over the period 2005-2006.[5]

Table 1: Comparing the 2005/2006 Gender and Racial/Ethnic Composition of Dentists with the General Labor Force in California*

		Proportion of Active Dentists	Proportion of CA Labor Force[6]
Gender	**Men**	70.9	50.1
	Women	29.1	49.9
Race / Ethnicity	**White**	56.7	44.5
	Asian	32.4	13.2
	Latino	7.1	33.8
	African American	2.5	5.8
	Other Race[7]	1.3	2.7

Source: Combined 2005 & 2006 American Community Survey, Public Use Microdata Sample for California
*All comparative estimates (active dentists vs. CA general labor force) are statistically, significantly different from one another (alpha = .05).

Data indicate that Latino dentists represent an estimated 7% of the state's active dentists, but roughly 34% of California's general labor force. Although not as dramatic a difference, African American dentists represent an estimated 2.5% of California's dentists, a proportion roughly half the size of the state's African American general labor force.

Native Americans, Native Hawaiians & Pacific Islanders, and multiracial dentists represent just 1.3% of active dentists in the state but almost 3% of California's general labor force.

Whites and Asians represent much larger proportions of California's dentists in comparison with the general labor force. However, because "Asian" is a very broad category, it is likely that certain Asian subpopulations are not well-represented.
Table 2 presents detailed data on Asian dentists in California in two subgroups created by the authors to better describe Asian dentists and the subpopulations they represent.

Table 2: 2005/2006 Asian Dentists in California by Selected Group

	Asian Group A	Asian Group B:
Proportion of Asian Dentists in CA	97.0	3.0
Proportion of Asian Labor Force in CA[8]	90.0	10.0

Source: Combined 2005 & 2006 American Community Survey, Public Use Microdata Sample for California

Group A includes:	**Group B includes:**	
Asian Indian	Bangladeshi	Cambodian
Chinese	Hmong	Indonesian
Filipino	Laotian	Malaysian
Japanese	Pakistani	Sri Lankan
Korean	Taiwanese	Thai
Vietnamese	Other Asian	

Although data are limited in their level of detail, they suggest that Asian subpopulations included in Group B may be underrepresented among dentists in California. In combination, these populations account for roughly 10% of the Asian general labor force, but just 3% of Asian dentists in California.

Table 3: 2005/2006 Mean Age of Dentists in California by Gender and by Race/Ethnicity (White vs. non-White)

	Gender		Race/Ethnicity	
	Men	**Women**	**White**	**Non-White**
Mean Age of Active Dentists	50	42	51	44

Source: Combined 2005 & 2006 American Community Survey, Public Use Microdata Sample for California

These data indicate an estimated 8-year age difference between men and women dentists in California. The mean age of White dentists is an estimated 7 years older than non-White dentists in California.

There is considerable variation in income of the state's active dentists. Table 4 displays income data by gender and race and ethnicity.

Table 4: Mean Annual Wage of Dentists in California by Gender and by Race/Ethnicity (White vs. non-White) in 2006 Inflation-adjusted Dollars[9]

All Dentists		Mean Wage[†]	$163,966
		(+/-)[‡]	$12,480
Gender	**Men**	Mean Wage	$181,126
		(+/-)	$15,808
	Women	Mean Wage	$99,478
		(+/-)	$16,640
Race / Ethnicity	**White**	Mean Wage	$188,905
		(+/-)	$18,720
	Non-White	Mean Wage	$129,729
		(+/-)	$13,936

Source: Combined 2005 & 2006 American Community Survey, Public Use Microdata Sample for California

The estimated 2006 average annual wage for all California dentists was $163,966. There are statistically significant differences in earnings based on gender and race/ethnicity (White vs. non-White).

[†] The mean annual wage of dentists was obtained by first estimating an hourly wage, which was then multiplied by 2080 hours to obtain a full-time equivalent annual income.
[‡] The (+/-) column expresses a margin of error which represents a 95% confidence interval. This means that with 95% confidence, the estimate for mean income is within the interval expressed by the margin of error.

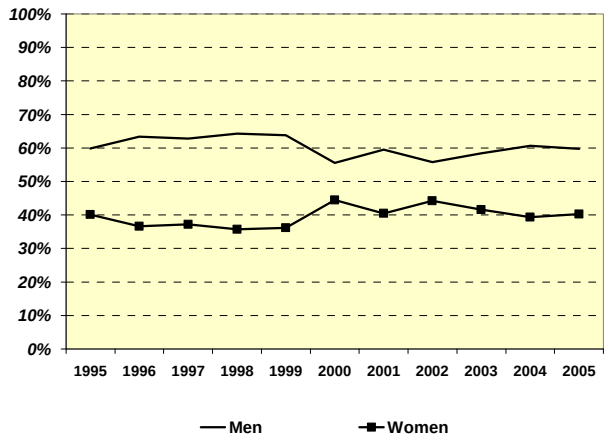
The estimated 2006 average annual wage for male dentists ($181,126) was roughly $80,000 more than women dentists ($99,478). And the estimated 2006 average annual wage for White dentists ($188,905) was approximately $60,000 more than non-White dentists ($129,729).

However, these estimates do not control for factors that are known to affect differences in earnings. These factors include experience, geographic location of the practice, whether the dentist owns a private practice or works in a community clinic setting, or whether the dentist is a generalist or a specialist.

Dental Education in California

The following section describes first-year enrollment in California's five Doctor of Dental Surgery (DDS) programs between 1996 and 2005. Total first-year enrollment during this period has remained consistent at approximately 560 new students each year.

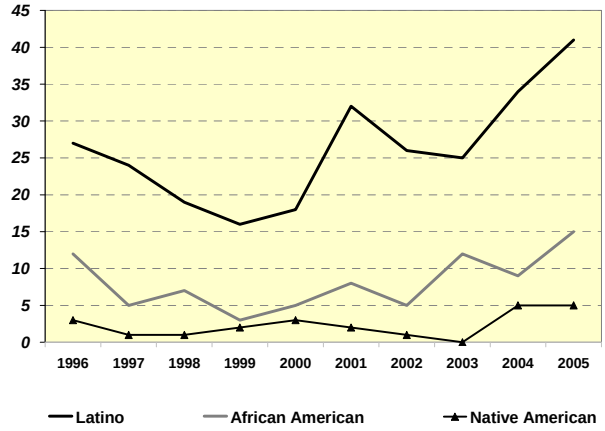
Figure 1: First-year Enrollment in California's DDS Programs by Gender: 1996-2005



Source: American Dental Association, Annual Report on Dental Education

The data show fluctuations in the gender composition of first-year enrollments in California's DDS programs over the past decade. The proportion of women has ranged between 35%-45% during this period. Over the past few years female enrollment has been consistently at about 40%.

Figure 2: Latino, African American and Native American First-year Enrollment in California's DDS Programs: 1996-2005



Source: American Dental Association, Annual Report on Dental Education

Collectively, Latino, African American, and Native American students have represented 5%-7% of total first-year enrollments in California's DDS programs for most of the past decade.[10] However, the most recent years of available data show an upward trend among all three groups of students, and in 2005 they combined to represent 11% of total first-year enrollments. Much of this increase can be attributed to greater numbers of Latino students enrolled at the University of the Pacific. More recent enrollment data is needed to confirm whether the upward trends are sustained.

Discussion & Policy Implications

The racial/ethnic composition of California's active dentists is overwhelmingly White and Asian; collectively they represent an estimated 89% of the workforce. However, data suggest that certain Asian subpopulations are not well represented among Asian dentists in the state, including the Hmong, Laotian, and Cambodian populations. Overall, underrepresentation is most pronounced for the state's Latino population, who account for more than one-third of the state's general labor force but roughly 7% of California's active dentists. But it is also true that there are very few dentists identified as African American, American Indian, or Native Hawaiian/Pacific Islander.

Available data indicate that active dentists are overwhelmingly male, but the gender composition may be expected to shift over time as more women graduates of DDS programs enter the labor force. Trended education data describing first-year enrollments indicate that women are more highly represented in California's five DDS programs by comparison with currently active dentists.

In contrast, education data indicate that the racial/ethnic composition of students in California's DDS programs is similar to the active dental labor force. This suggests that the profession will remain largely White and Asian at least in the near term.

There are many factors that contribute to the successful recruitment of minority dental students. An important one is a student's perception that the clinical rotation experience meaningfully enhances the "ability to care for diverse groups."[11] This suggests that dental programs that are committed to integrating community-based practice experience and that highlight the role of cultural differences in treatment planning as part of the clinical education, may be more successful in recruiting minority students. Another factor found to contribute to the successful recruitment of minority students is the presence of minority clinical faculty,[11] which presents challenges given that the pool of available of minority faculty is directly related to the pool of minority dental students; in both cases they are comparatively small. Given the lack of minority faculty, one alternative may be well-designed mentorship programs that foster relationships between students and practicing professionals in the community.[11]

The American Dental Education Association has adopted several strategies in recent years in an effort to address the lack of diversity in the profession. These include sponsoring conferences that focus on best practices for recruiting underrepresented minorities into dentistry; a minority faculty development program currently funded through the year 2009; grant funding to support recruitment of underrepresented groups into dental education programs; continuing to advocate for support of federal programs that address underrepresentation in dentistry and the health professions generally; and collaborating with a range of foundations and other organizations committed to addressing issues of minority underrepresentation in dentistry through various outreach and marketing campaigns.[12]

Two of the higher profile efforts to address minority student representation in California's dental schools are the California Dental Pipeline Program sponsored by The California Endowment[13] and the Summer Medical Dental Education (SMDEP) programs funded by the Robert Wood Johnson Foundation.[14] The Dental Pipeline Program is a comprehensive effort to reduce racial/ethnic disparities in oral health care, which includes addressing the lack of racial/ethnic diversity in the profession of dentistry and dental education programs in California. The SMDEP program recruits freshman and sophomore college students from local and regional institutions to participate in an intensive academic preparation program each summer, hosted by UCLA's schools of medicine and dentistry. The program targets students who identify with a population group that is underrepresented in medicine or dentistry, or who come from an economically disadvantaged background, and who express interest in pursuing a career in one of these professions. There are other smaller scale efforts to broaden racial/ethnic diversity in dentistry being made by individual institutions. These are often summer enrichment programs that target high school or college students who identify with populations underrepresented in the profession.[15] The education data presented in this brief suggest that some small gains have been made, but data from more recent years is needed to see if the upward trends are continuing.

There is little disagreement regarding the value of diversity in dental education programs and in the profession. The educational experience of dental school is enhanced by a student body represented by a diversity of backgrounds and experiences. A diverse professional workforce may be a key strategy to addressing oral health disparities suffered by minority and low-income populations in California.[16, 17]

One of the principal challenges in diversifying the student bodies in California's dental programs is financial support: who will provide monies for a

sustained and comprehensive effort?[18] Such an effort would include career development programs, community outreach, data collection and program evaluation, and would involve multiple stakeholders including local populations, education institutions, student bodies, government agencies, and practicing professionals. Private foundations continue to play an important role in helping to finance these kinds of public health objectives. However, the scale of the effort required to successfully address the myriad issues that attend underrepresentation of certain racial and ethnic in dental education must have state support. Some mix of public and private funding will be key to engaging these wide-ranging issues.

References

[1] Census 2000 Summary File 1 (SF1) 100-Percent Data, Table P4. Hispanic or Latino, and Not Hispanic or Latino by Race (Total Population).

[2] 2006 American Community Survey, Public Use Microdata Sample for California.

[3] State of California, Department of Finance, *Race/Ethnic Population with Age & Sex Detail 2000-2050.* Sacramento, CA, July 2007.

[4] Active dentists are defined as those identified in the sample data as having reported working in the past 12 months.

[5] PUMS data for the 2005 & 2006 ACS surveys were combined in order to have enough observations to generate useful estimates.

[6] We use the population between the ages of 18 and 65 (inclusive) as a proxy for the general labor force.

[7] Other race combines sample observations of American Indian, Native Alaskan, Native Hawaiian, Pacific Islander and multiracial dentists.

[8] The state's Asian population between the ages of 18 and 65 (inclusive) is used as a proxy for the Asian general labor force.

[9] In order to generate comparable earnings estimates we limited the sample to dentists that reported having worked at least 40 weeks in the last year and at least 20 hours per week.

[10] This calculation is based on enrollment of students for whom race/ethnicity is identified. During the period 1996-2006, first-year students enrolled in California's DDS programs whose race/ethnicity is unknown represent anywhere from 1%-5% of total first-year enrollment.

[11] Anderson, R., Carreon, D., Friedman, J., et al. *What Enhances Minority Recruitment to Dental Schools?* Journal of Dental Education. 71(8): August 2007.

[12] These strategies are outlined in a document published by the American Dental Education Association titled *Strategies to Enhance Diversity (2006-2007).* http://www.adea.org/CED/Docs/Strategies_ADEA.pdf

[13] This was originally a partnership with the Robert Wood Johnson's national initiative: *Pipeline, Profession & Practice: Community-Based Dental Education* which began with the 2002-2003 academic year. In September 2007, TCE announced it would fund the program for an additional three years.

[14] Detailed information can be found on the program's website: http://www.smdep.org/start.htm

[15] For example, USC's school of dentistry received a 3-year grant from The California Wellness Foundation to conduct summer enrichment activities for underrepresented college students in the Los Angeles area who expressed interest in pursuing a career as a dentist.

[16] Butters, JM., Winter, PA. *The Effects of Gender and Race on Practice Pattern Preferences of Dental Students*. Journal of the American College of Dentists. 1999 Fall; 66(3): 39-46.

[17] Davidson, P., Carreon, D., Baumeister, S. et al. *Influence of Contextual Environment and Community-Based Dental Education on Practice Plans of Graduating Seniors*. Journal of Dental Education. 71(3): March 2007.

[18] Geshan S. *Policy Issues in Dental Workforce Diversity and Community-Based Dental Education*. National Conference of State Legislatures. November 2004.

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