Physician Diversity in California: New Findings from the California Medical Board Survey

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The Center for California Health Workforce Studies was created in 1997 as one of six regional workforce centers initially funded by a cooperative agreement with the National Center for Health Workforce Information and Analysis within the US Health Resources and Services Administration's Bureau of Health Professions. The Center's multi-disciplinary team of investigators examines critical issues in the distribution, diversity, supply and competence of health professionals in California and the nation. The Center is directed by Kevin Grumbach, MD (kgrumbach@fcm.ucsf.edu).

EXECUTIVE SUMMARY

A recent poll by the Field Research Corporation showed that six in ten voters agree that it is important for California to have enough health professionals who reflect the racial and ethnic diversity of the patients they serve. This report examines new data from the California Medical Board Relicensure Survey that provide a detailed profile of the ethnic characteristics of physicians in the state. The findings of this report document that a huge gap remains in California between the ethnic composition of the state's population and the state's physician workforce.

Key Findings

Key findings from the analysis of survey responses from 61,861 physicians who are active in patient care in California and no longer in training include:

1. **The underrepresentation of Latinos and African Americans among California physicians remains dire.** Findings from the California Medical Board survey confirm the severe underrepresentation of Latinos and African Americans in the state's physician workforce. The disparity is particularly acute for Latinos, who constitute one-third of the state's population but only 5% of its physicians.

2. **California has very few physicians of Samoan, Cambodian, and Hmong/Laotian ethnicity, and these ethnic groups should also be recognized as underrepresented in medicine and more actively recruited into the profession.** A major strength of the California Medical Board survey is the unprecedented ability to examine variations within major ethnic groups. This is particularly an asset for detecting variations within Asian ethnic groups and revealing specific Asian ethnicities which are underrepresented in medicine.

3. **Minority physicians in California play a key role in underserved communities. Minority physicians in California are much more likely than white physicians to practice in Medically Underserved Areas, Health Professions Shortage Areas,**

communities with high proportions of minority populations, and low income communities. This pattern is particularly true for the traditionally underrepresented physician ethnic groups (African Americans, Latinos, and Native Americans), but also holds to a lesser degree for physicians from other non-white ethnic groups.

4. **Minority physicians in California are much more likely than white physicians to work in primary care (family medicine, general internal medicine, and general pediatrics).** Over 40% of minority physicians practice in generalist primary care fields, compared with 30% of white physicians. As concerns grow about the crisis in primary care in California, this finding demonstrates another strategic role of minority physicians in the state.

5. **California physicians speak many languages in addition to English.** Nearly one in five physicians in the state reports fluency in Spanish, including many non-Latino physicians. In contrast, fluency in Asian languages is largely limited to physicians of Asian ethnicity.

6. **The California Medical Board survey represents a major step forward in the ability of the state to have reasonably accurate and complete data on key characteristics of California physicians, and is a valuable resource for physician workforce analysis and planning in the state.**

Recommendations

1. **Invest in the educational pipeline preparing minority and disadvantaged students for careers in medicine and other health professions.**

2. **Promote diversity as a key part of expanding California medical education to increase the representation of minority and disadvantaged students.**

3. **Hold health professions schools accountable for an institutional culture and environment that promotes diversity and recruitment and retention of underrepresented minorities.**

4. **Increase incentives for physicians to work in underserved communities in California, including greater state investment in physician loan repayment programs such as the National Health Service Corps/California State Loan Repayment Program and the Steven M. Thompson Physician Corps Loan Repayment Program.**

5. **Implement a relicensure survey for doctors of osteopathy administered by the California Osteopathic Medical Board, and provide the resources to institutionalize the California Medical Board and California Osteopathic Medical Board surveys and production of regular analyses of these survey data.**

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INTRODUCTION

California is one of the most racially and ethnically diverse states in the nation. When it comes to healthcare, a key issue facing the public is whether the state has health professionals who reflect the changing demographics of the state and are positioned to address the needs of California's traditionally underserved populations. Prior studies have shown that African American and Latino physicians are severely underrepresented in California.[i] Californians are concerned about the lack of greater diversity among the state's health professionals. A public opinion poll of California voters conducted by the Field Research Corporation in September 2007 found that 60% of respondents agreed that it is important that the state have "doctors, nurses and other health professionals who reflect the racial and ethnic diversity of the patients they are serving." A majority believed that racial and ethnic diversity among health professionals would result in greater patient satisfaction, better management of patient's health conditions, improved health outcomes and more effective control of diseases. To increase the number of health professionals from the state's racial and ethnic populations, two in three voters polled supported increasing state government funding of the state's public medical schools, universities and community colleges to create effective change towards this goal. Sixty-nine percent favored having the state provide more scholarships to racial and ethnic minority students to encourage them to pursue careers in the health professions.[ii]

Several reports on California physicians have been issued over the past decade that included assessments of the racial and ethnic diversity of the physician workforce.[iii] However, questions have been raised about the validity of the primary data base used for these analyses, the American Medical Association (AMA) Physician Masterfile. Data on race-ethnicity can be missing for about one-third of the physicians listed in the AMA Masterfile. For those physicians in the Masterfile who do have race-ethnicity recorded, only major categories are included; for example, the Masterfile has only a single category for "Asian" with no further breakdown of specific Asian and Pacific Islander ethnicities. The Masterfile also does not contain any information about which physicians speak languages in addition to English. Additional concerns have been voiced about whether

the Masterfile accurately identifies which physicians are truly active in the workforce and the location of their primary practice.

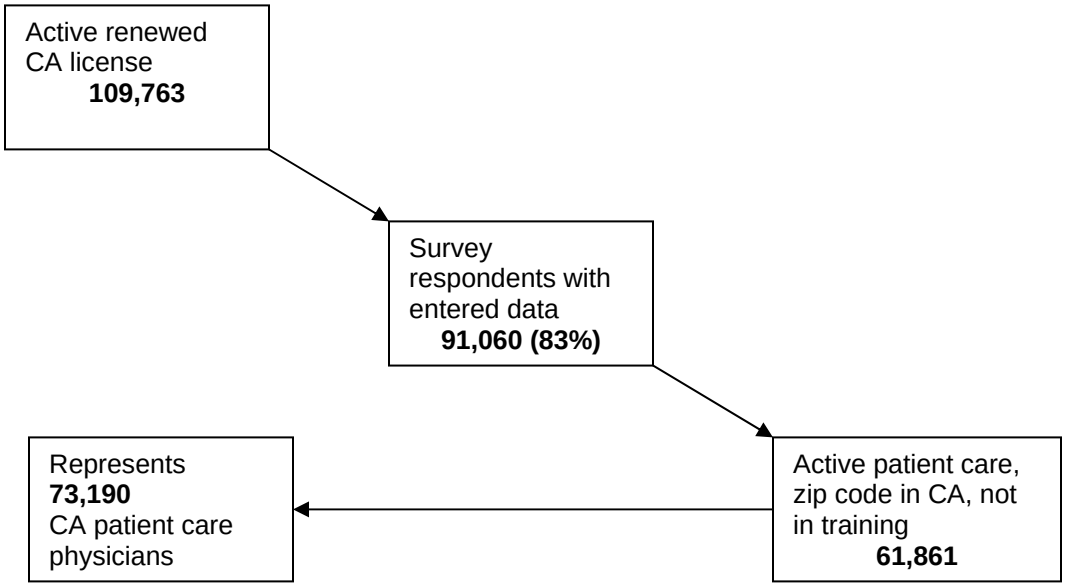
Concerned about the lack of reliable data on the physician workforce in California, the California Medical Association sponsored Assembly Bill 1586 (Negrete McLeod), which was enacted in 2001. This law for the first time required the California Medical Board to survey physicians when they renewed their licenses every two years. The Medical Board survey includes questions on hours worked per week in patient care, specialty, and zip code of the primary practice location. Moreover, the survey asks physicians to identify their ethnicity from among a detailed list of 28 ethnicities, including specific Latino and Asian ethnicities, and to indicate if they speak any of 34 languages listed on the survey. In this report, we provide the first public report on data from the California Medical Board survey, focusing in particular on the issues of physician race-ethnicity and language fluency.

METHODS

The California Medical Board licenses physicians with doctor of medicine (MD) degrees. (Physicians with doctors of osteopathy degrees (DO) are licensed by a different state board; the use of the term "physicians" throughout the remainder of this report refers only to physicians with MDs.) All physicians must apply to be re-licensed every two years, and are instructed to complete the survey questionnaire with each biennial application for re-licensure. The questionnaire was developed by the California Medial Board with input from an advisory group representing medical professional associations, the Office of Statewide Health Planning and Development, and UCSF workforce researchers. The questionnaire is displayed in Appendix 1. Completion of the questionnaire items on weekly hours in patient care, research, teaching and administration; practice zip code; training status; self-designated specialties; and board certification is mandatory. Completion of the items on ethnicity and language is voluntary. Physicians who are multi-ethnic and speak more than one language other than English are allowed to check more than one response to the ethnicity and language items.

As of July 2007, the Medical Board listed 109,763 physicians with an active California license who had completed one or more cycles of relicensure since 2001 and were therefore eligible for the Medical Board survey. Of these physicians, 91,060 (83%) completed at least one relicensure survey (Figure 1). Analysis of the survey results for these survey respondents indicated that 61,861 were actively providing patient care in California and no longer in residency or fellowship training.[iv] This group of 61, 861 active patient care physicians no longer in training and with a primary practice address in California is the sample used for the analyses for this report. Based on certain characteristics of survey non-respondents that are known to the Medical Board from basic licensure data (such as whether the physician has a mailing address in California), and using these characteristics to predict the likelihood of being an active practitioner in California based on the status of survey respondents with similar characteristics, we estimate that overall there are 73,190 physicians no longer in training who are active in patient care in the state. When displaying numbers in the following sections, we refer to numbers using this extrapolated estimate as "weighted" counts and those using the 61,861 sample as "unweighted" counts.

Figure 1: Survey Participant Flow Chart



RESULTS

Overall Racial/Ethnic Diversity

The Medical Board survey provides respondents with a choice of selecting one or more ethnicities from 28 ethnic options. Physicians who declined to state race/ethnicity or who left the question blank comprised 13.8% of all respondents (Table 1). Most respondents indicated a single ethnicity, with only 4.6% selecting two or more ethnicities. The remainder of this report includes analyses from those respondents who marked at least one racial/ethnic category.

Table 1. Respondent Race/Ethnicity

	Number[§]	Percent
One ethnicity	49,823	81.5%
Two ethnicities	2,615	4.28%
Three or more ethnicities	210	0.34%
Decline to state	4,733	7.73%
Missing	3,757	6.15%

[§]Number reported is based on unweighted counts of physicians

The racial and ethnic profile of active patient care physicians in California is shown in Table 2, displaying the percentages and weighted counts of physicians. The percentages of the California population in each ethnic group are shown in the last column for purposes of comparison. The first set of columns in Table 2 show the results for physicians when multi-ethnic was not allowed as a classification category and we assigned each physician to a single ethnic group using a hierarchical assignment protocol for physicians who reported more than a single ethnicity.[v] The second set of columns shows the distribution of physicians by ethnicity including a separate category for multi-ethnic physicians. Non-Latino Whites (61%) represent the largest group of physicians, with Asians/Pacific Islanders constituting the second largest group (26%). Latinos and African Americans remain extremely underrepresented in the California physician workforce relative to their share of the overall California population. African American physicians are only 3.2% (2,034) of the total California physician workforce despite making up 7% of the state's total population. Latinos are the most underrepresented, constituting 32.4% of the California population but only 5.2% (3,282) of physicians in California. In the tabulations including a multi-ethnic category, physicians show a lower proportion of multi-ethnic members (3.4%) than California's overall population (4.7%). Physicians of Native American ethnicity are especially likely to report that they are multi-ethnic; as shown in Table 2, many of the physicians assigned to the Native American category based on assigning them to only a single allowed ethnicity fall under another ethnic category when the multi-ethnic category is included. Only 0.1% of physicians report that they are exclusively of Native American ethnicity compared to 1% of California's population.

Table 2. California Physicians and Population by Race/Ethnicity

	CA Physicians*				CA Population**
	Assigned to a Single Race/Ethnicity		Multiple Race/Ethnicity Allowed		
	%	Weighted count	%	Weighted count	%
White	61.7%	38,859	61.7%	38,859	46.7%
African American	3.2%	2,034	3.0%	1,905	6.7%
Asian/ Pacific Islander	26.4%	16,644	25.0%	15,723	11.2%
Native American	0.6%	400	0.1%	65	1.0%
Latino*	5.2%	3,282	4.1%	2,571	32.4%
Multi-ethnic	-	-	3.4%	2,170	4.7%
Other	2.9%	1,796	2.7%	1,722	
Total	100%	63,015	100%	63,015	102.7%

*Excludes physicians who did not report an ethnicity
**Total for CA population is slightly greater than 100% because some Latinos are counted in additional ethnic categories

The magnitude of the under-representation of African American and Latino physicians becomes most apparent when examining the weighted counts of physicians in these groups. In a state with a total population of over 35 million, we estimate that there are only approximately 2,000 African American physicians and only about 2,500-3,200 Latino physicians in active patient care throughout the entire state.

By Region

Across California regions, physician diversity may reflect the population diversity, but many areas show the underrepresentation of minority physicians in heavily minority populations. Table 3 shows the difference in population composition and the corresponding physician racial/ethnic composition in each major region of the state. (See Appendix 2 for a list of the counties in each region.) For example, in the Bay Area, 59% of the population is white and has a physician population that is also comparable at 65% white. However, discrepancies in population to physician composition are more obvious in underrepresented populations. In the Bay Area, 20% of the population is Latino, but only 3.6% of the physician population is Latino. Similarly, overall population for African Americans is 7.3% in the Bay Area, while African American physicians are only 2.9% of all physicians. Each region has a unique population and physician composition, but most obvious are the discrepancies between the overall Latino population and lower Latino physician population in all areas. Areas of the Inland Empire, Orange County, Los Angeles, Central Coast, and South Valley have a Latino population of over 30%, yet with the corresponding Latino physician populations at only 5-8%, there is much to be done to improve the underrepresented physician population overall and in these communities. In general, African Americans and Native Americans have similar low physician representation in all communities compared to the population. Our data also show by region, the general overrepresentation of Asian physicians compared to population percentages, but does not show the complete diversity of this ethnic category. Language diversity later in this report underscores the need for closer examination of Asian physicians and their heterogeneity.

Table 3. Regional Distribution of California Physicians and Population by Race/Ethnicity

Region	% Latino		% African American		% Native American		% Pacific Islander/ Native Hawaiian		% Asian		% Other		% White	
	Pop	Phy	Pop	Phy	Pop	Phy	Pop	Phy	Pop	Phy	Pop	Phy	Pop	Phy
Bay Area	19.7	3.6	7.3	2.9	0.65	0.66	1.47	2.2	18.4	23.0	0.52	2.1	58.7	65.5
North Counties	11.2	3.2	1.4	1.7	3.4	1.3	0.50	1.7	1.9	9.93	0.15	1.6	84.4	80.6
Central Valley/Sierra	28.4	4.9	4.6	3.0	1.3	0.86	1.0	8.4	7.4	26.9	0.31	3.4	66.0	52.5
Inland Empire	37.5	6.1	7.7	3.7	1.2	0.53	0.79	5.7	4.2	29.9	0.28	4.1	62.3	50.0
San Diego	28.9	6.8	5.7	2.0	0.91	0.63	1.30	2.2	8.5	13.1	0.46	2.1	65.7	73.3
Orange	30.8	4.7	1.7	1.9	0.70	0.64	0.90	2.5	13.6	30.1	0.31	3.8	64.8	56.5
Los Angeles	44.6	6.0	9.8	4.8	0.81	0.47	0.80	3.9	11.9	25.4	0.28	3.3	48.7	56.2
Central Coast	34.6	5.8	2.4	1.5	1.0	0.87	0.75	2.2	4.8	12.3	0.24	2.3	69.3	75.0
North Valley/Sierra	15.3	4.1	6.5	2.5	1.1	0.59	1.29	2.6	8.7	21.7	0.43	1.8	71.0	66.8
South Valley/Sierra	43.3	8.1	4.8	3.8	1.6	0.81	0.46	5.4	5.1	27.4	0.14	4.4	57.8	50.1

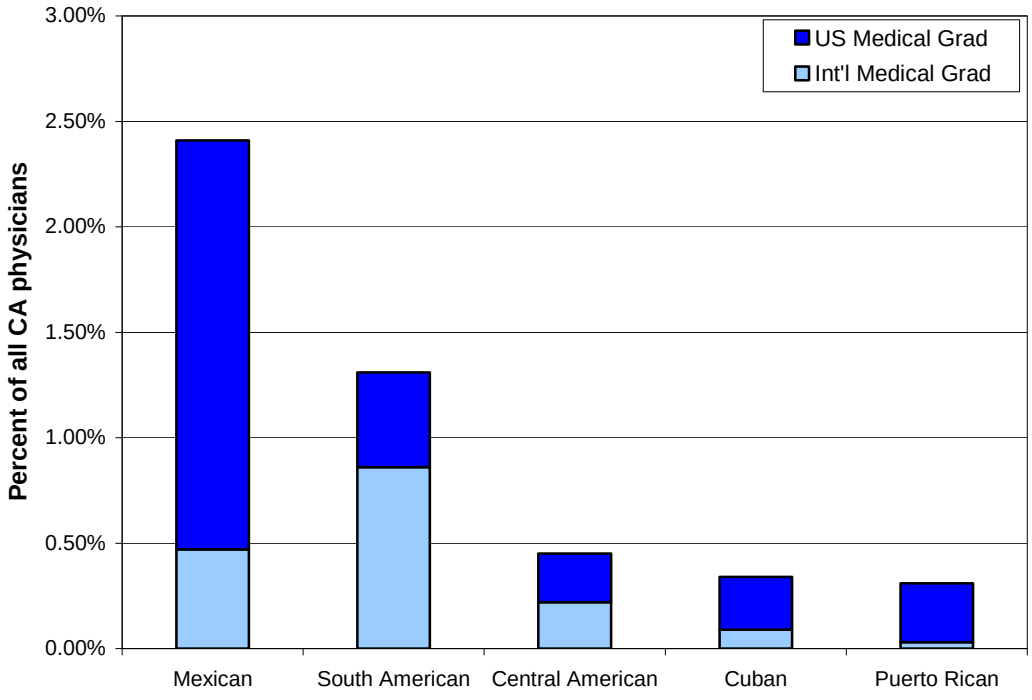
Pop= Population percentages in California, Phy=physician percentages in California for each category, excluding physicians who did not report ethnicity

*Total % for CA population in each region is slightly greater than 100% because some Latinos are counted in additional ethnic categories

Latino Physicians

The Medical Board survey allows unprecedented ability to examine variations within major ethnic groups. Figure 2 provides detailed breakdowns for the specific Latino ethnicities and also indicates how many physicians in each ethnic group received their medical degrees at U.S. compared to non-U.S. schools. The tabulations in Figure 2 permit duplicate counts of physicians in the numerator for the relatively few who checked more than one Latino ethnicity; for example, a physician who checked both Mexican and Central American ethnicities appears in both Mexican and Central American ethnicity tallies. Physicians of Mexican ethnicity comprise the largest group among Latino physicians (2.4% of all California patient care physicians). The majority of Mexican American physicians, as well as Central American, Puerto Rican and Cuban ethnicity physicians, graduated from medical schools in the U.S. as shown by the dark bars in Figure 2. In contrast, the majority of Latino physicians reporting a South American ethnic background are International Medical Graduates (IMG) as shown in the lighter bars in Figure 2.

Figure 2: Selected Latino Ethnicities, as Percentage of Overall California Physicians

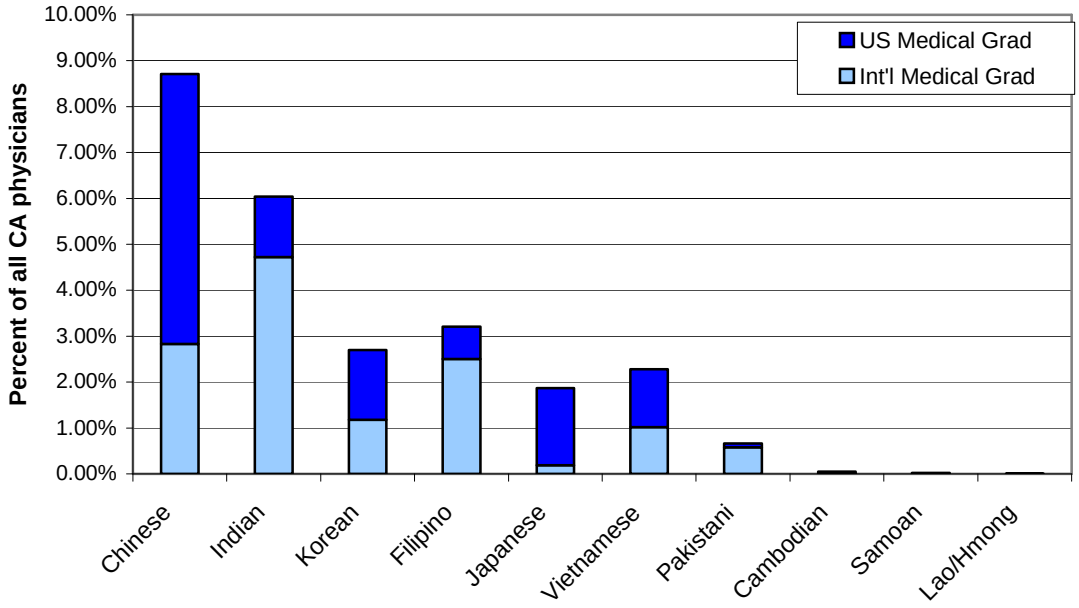


Note: tabulations in Figure 2 allow multi-ethnic physicians to appear in more than one ethnic group tally

Asian Physicians

Physicians reporting Chinese, Indian, and Filipino ethnicity make up the majority of physicians within the Asian ethnicities included in the survey (Figure 3). Chinese ethnicity respondents comprise the largest group within the selected Asian ethnicities at 8.8% of overall California patient care physicians. However, within Asian ethnicities, Cambodian, Lao/Hmong and Samoan physicians are seriously underrepresented among California physicians, representing less than 0.05% of California physicians in each respective category. We estimate that there are only about 40 Cambodian, 30 Lao/Hmong, and 20 Samoan ethnic physicians active in patient care in California. A majority of Chinese, Korean, Japanese and Vietnamese ethnic physicians graduated from US medical schools. In contrast, most physicians reporting Indian, Pakistani, or Filipino ethnicities graduated from international medical schools.

Figure 3: Selected Asian Ethnicities, as Percentage of Overall California Physicians

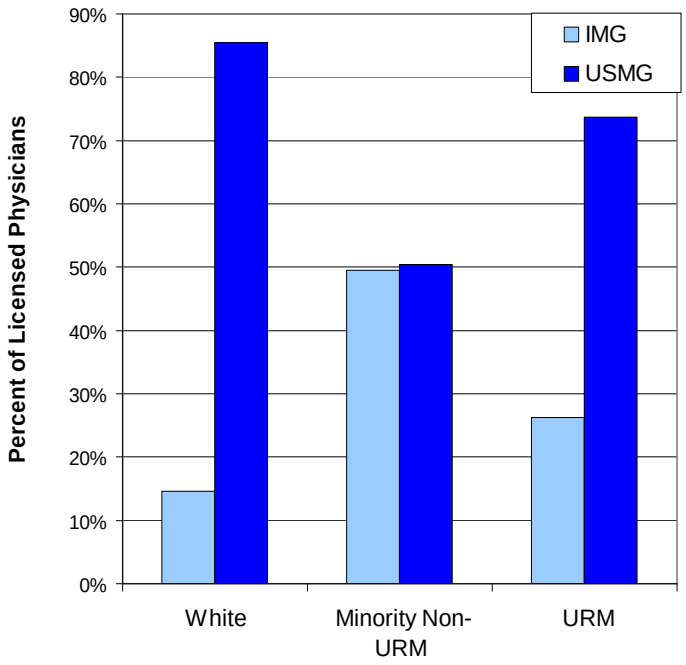


Note: tabulations in Figure 3 allow multi-ethnic physicians to appear in more than one ethnic group tally

International Medical Graduates

Figure 4 highlights the relative distribution of international medical graduates (IMGs) among major ethnic classifications. In these analyses, we categorize historically underrepresented groups (African-American, Latino, and Native Americans) as underrepresented minorities (URM). White physicians are categorized as white ethnicity, and all others are grouped under the heading "minority, non-URM." It is important to note that the "minority, non-URM" group in fact includes some Asian ethnicities that are very underrepresented among physicians, such as Samoan and Cambodian. As shown in Figure 4, about 15% of white physicians are IMGs, compared with about 25% of URMs and half of minority, non-URM physicians in the state.

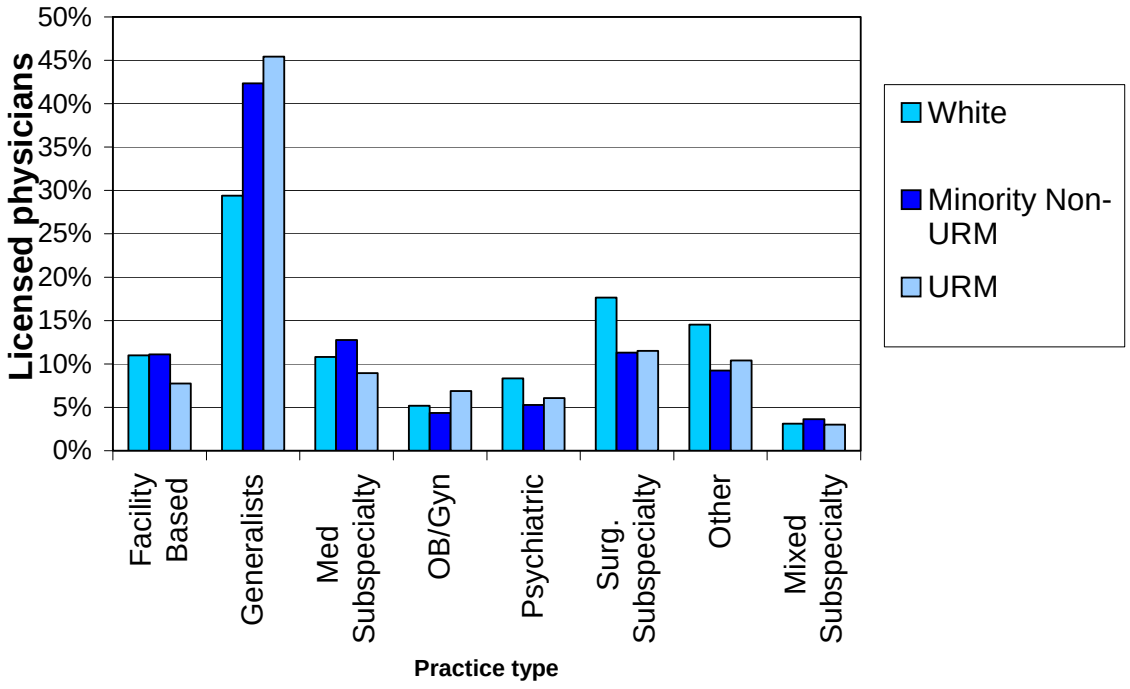
Figure 4: United States and International Medical Graduates by Race/Ethnicity in Calfornia



Specialty by Race/Ethnicity

Figure 5 shows the distribution of specialties by race and ethnicity. URM physicians are the most likely to report practice in primary care generalist fields (Family Medicine, General Practice, General Internal Medicine, and General Pediatrics) with over 45% of URMs reporting generalist specialties. Minority non-URM physicians are also more likely than white physicians to be in generalist specialties, although a greater proportion report medical (e.g., cardiology, nephrology, endocrinology) and facility based subspecialties (e.g., radiology) as compared to white physicians. A greater proportion of white than of URM and minority non-URM physicians are in psychiatric and surgical subspecialties (e.g., otolaryngology, urology).

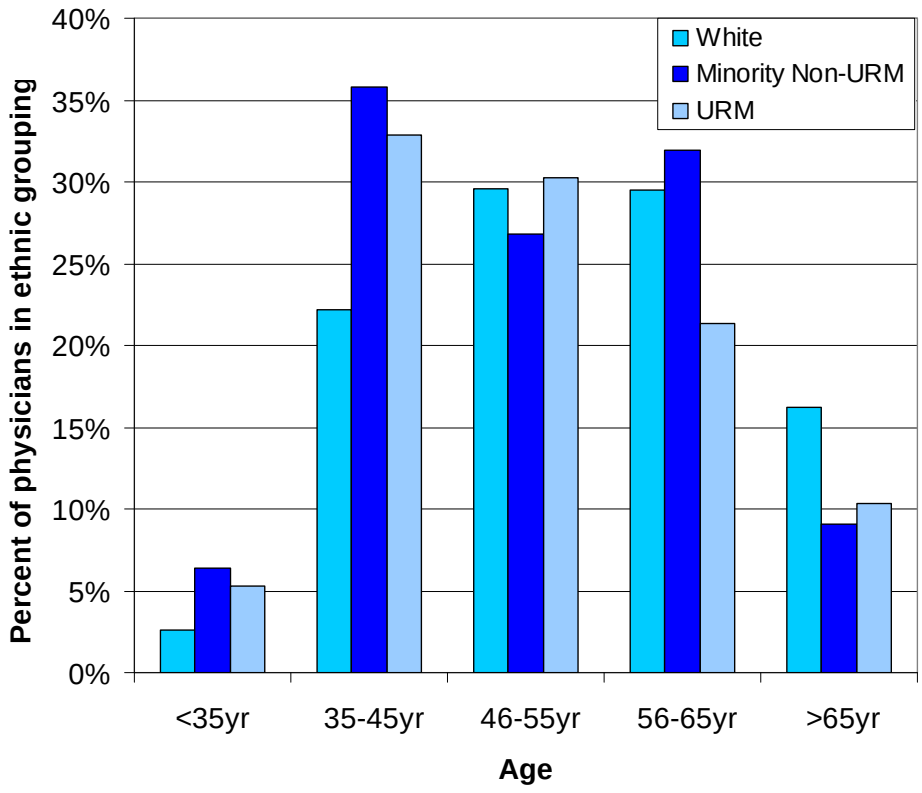
Figure 5: California Active Patient Care Physicians by Specialty and Race/ethnicity



Age Distribution by Race/Ethnicity

Minority physicians tend to be younger than white physicians (Figure 6). For example, about one-third of both underrepresented and non-underrepresented minority physicians are in the 35-45 year age range, in contrast to only about 20% of white physicians. About 15% of active white physicians are older than 65 years of age, but only about 10% of minority physicians are in this age group. Because of this pattern of age distribution, as physicians currently active in patient care reach retirement age, minorities will comprise a somewhat greater share of the remaining active physicians.

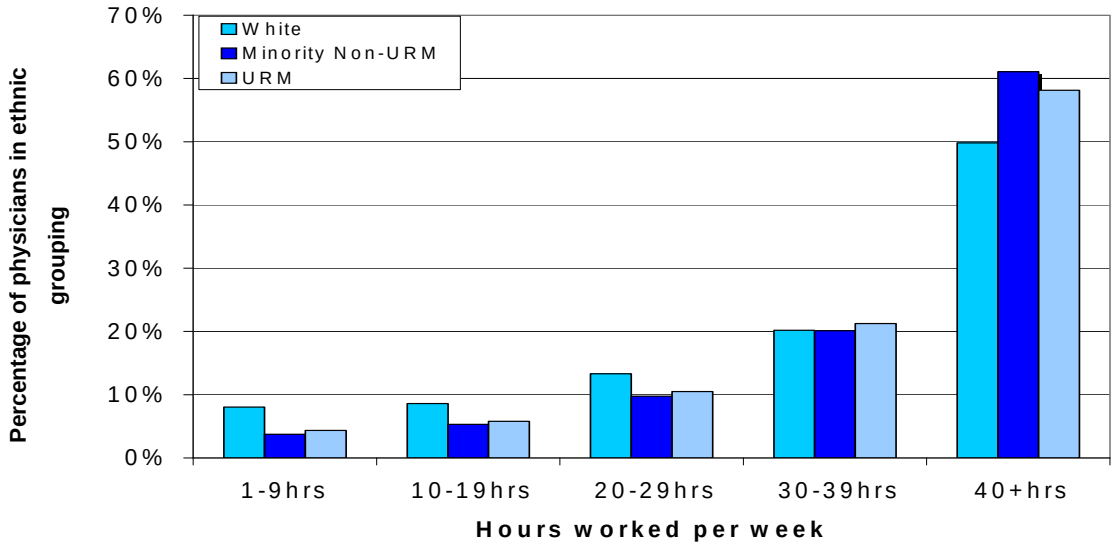
Figure 6: Age Demographics by Race/Ethnicity among California Physicians



Patient Care Hours Worked Per Week by Race/Ethnicity

URM and minority physicians are more likely than white physicians to work 40 or more hours per week in patient care (Figure 7). This pattern is largely explained by the younger age distribution of minority physicians.

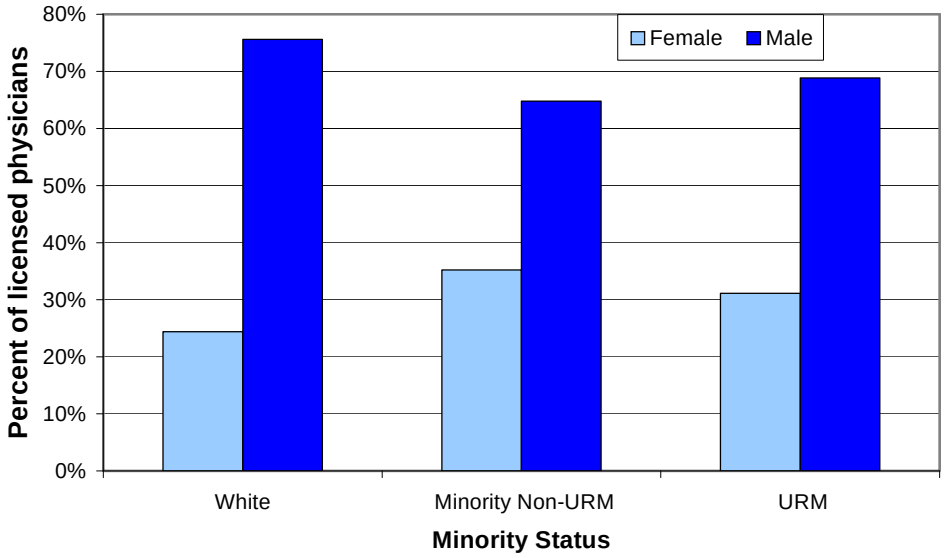
Figure 7: Patient Care Hours per Week by Race/Ethnicity among California Physicians



Gender Distribution by Race/Ethnicity

Compared with whites, a somewhat higher proportion of URM and minority non-URM physicians are women (figure 8).

Figure 8: Gender by Race/Ethnicity of California Physicians



Geographic Distribution by Race/Ethnicity

Using the zip code of the physician's practice location as reported on the survey, we geocoded physicians to Medical Service Study Areas (MSSAs). MSSAs are rational service areas defined by state agencies for health workforce planning. By geocoding physicians in this way, we could determine which physicians practiced in communities that are disadvantaged. We used several different measures for identifying potentially disadvantaged communities. These measures included whether the MSSA was:

1. A Medically Underserved Area (MUA). MUAs are designated by the federal government for having a combination of health disparities and relatively low local health care resources.

2. A Primary care Health Professional Shortage Area (HPSA). HPSAs are designated by the federal government based on several criteria, including having less than 1 primary care physician for every 3,500 residents. We counted MSSAs as a HPSA if any portion of the area was designated a geographic or population HPSA. HPSA designated areas are listed in Appendix 3 and mapped in Appendix 4.

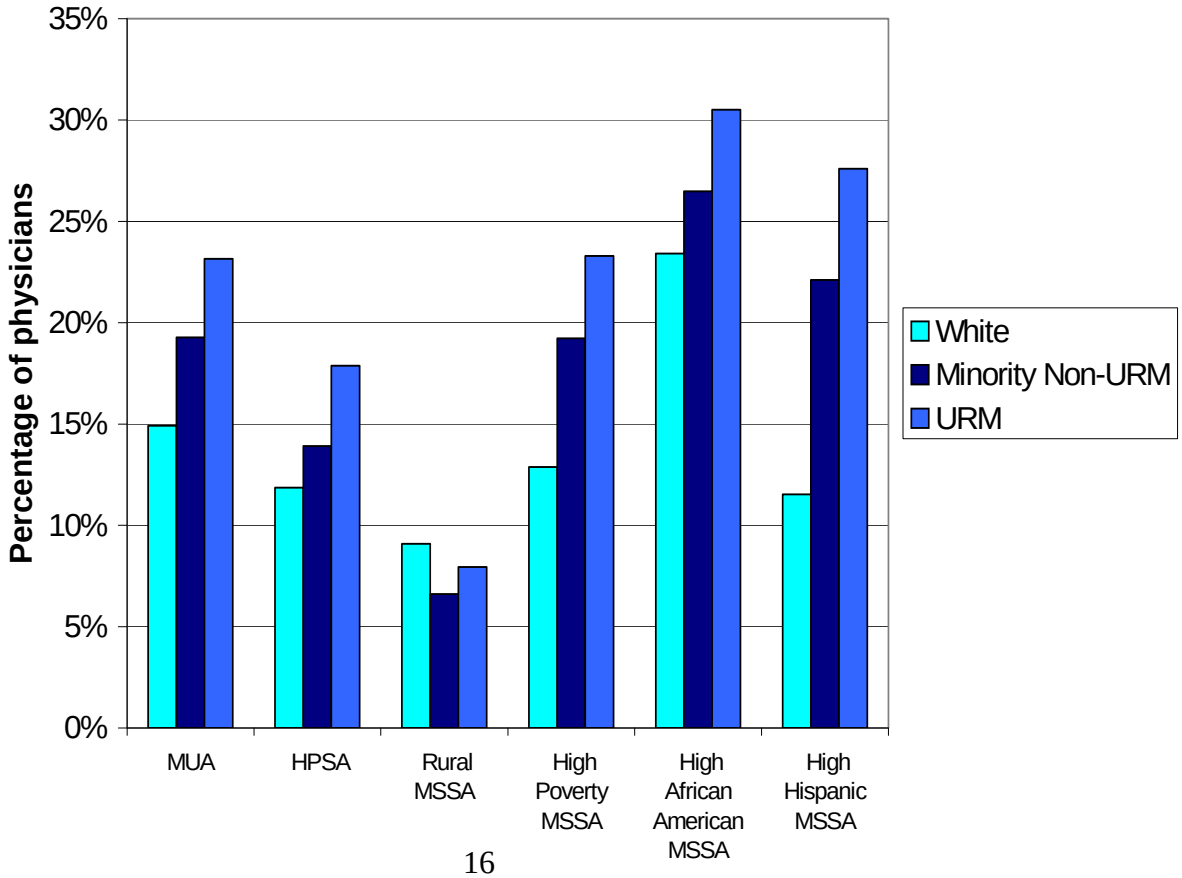
3. A rural community. Rural areas tend to have lower supplies of physicians and more difficulty recruiting physicians than urban areas. California defines rural MSSAs as those with population densities of fewer than 250 residents per square mile and containing no city of 50,000 or more residents.

4. A vulnerable population area, defined as communities with relatively high proportions of minority and poor residents. Because data on population insurance status are not available at the MSSA level, minority and low-income populations also serve as a proxy for areas that have high proportions of uninsured patients.[vi] Consistent with previous research, we defined vulnerable population areas as those having either a proportion of African American (high African American MSSA) or Latino (high Latino MSSA) residents at or above the 85th percentile for communities in the state,

or having a median household income in the lowest quartile for communities in the state.

Figure 9 shows the relative distribution of physicians in underserved areas compared across the three major groupings of white, URM, and minority non-URM physicians. The first set of 3 columns shows the percentage of physicians in each ethnic group working in medically underserved areas (MUA). More than 20% of URM patient care physicians practice in MUAs, compared with 18% of minority non-URM physicians and 15% of white physicians. The same pattern is found for the likelihood of physicians practicing in HPSAs, high poverty areas, high African American areas, and high Latino areas. A higher percentage of URMs practice in these areas than of white physicians, with non-URM minority physicians having an intermediate probability of working in these underserved areas. The only area for which this trend differs is rural MSSAs, where white physicians are slightly more likely than URM physicians to practice. Note that the geographic categories listed in Figure 9 are not mutually exclusive; for example, a community may be simultaneously categorized as an MUA, HPSA, high poverty MSSA, etc.

Figure 9: Percentage of California Physicians Working in Disadvantaged Communities by Race/Ethnicity



Language Diversity

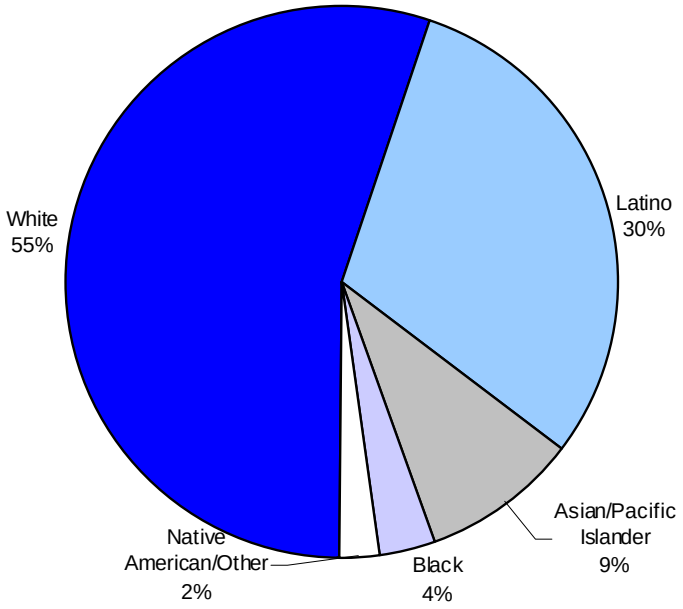
Given the language diversity within California, there is a growing need for physicians who can provide healthcare in a culturally and linguistically appropriate manner. Eighteen percent of California active patient-care physicians self reported speaking Spanish fluently (Table 3). Smaller percentages speak other European languages, including French (4.5%) and German (2.1%). A diversity of Asian languages is represented, including Mandarin (4.3%) and Cantonese (2.2%).

Table 4. Most Common Languages Spoken By California Physicians

Language Spoken	% of Physicians
Spanish	18.1%
French	4.5%
Mandarin	4.3%
Hindi	4.2%
Tagalog	2.7%
Farsi	2.6%
Cantonese	2.2%
German	2.1%
Vietnamese	2.0%
Korean	1.7%
Other Chinese	1.6%
Arabic	1.6%
Punjabi	1.5%

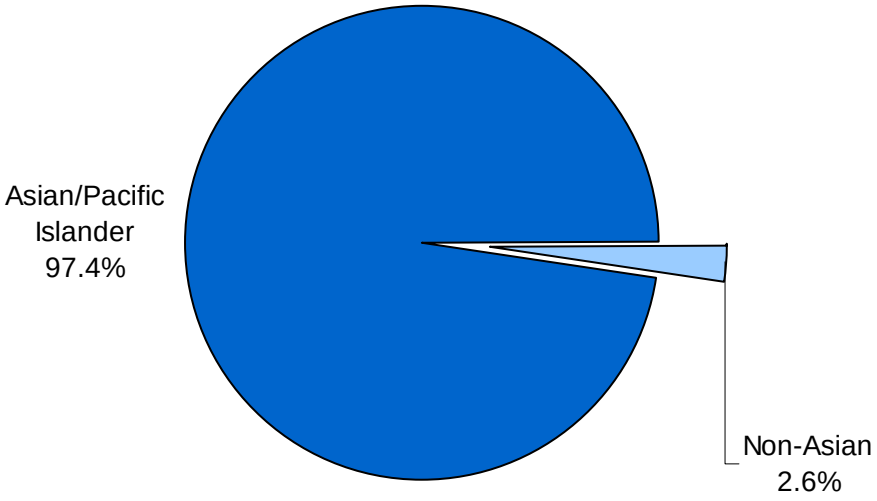
Fluency in a non-English language is not reserved to minority physicians. Over half of the physicians who reported speaking Spanish are non-Latino white (Figure 10). Although almost all Latino physicians reported speaking Spanish , only a minority of non-Latino white physicians reported speaking Spanish. However, the much greater numbers of non-Latino physicians in the state result in these physicians comprising the majority of Spanish speaking physicians in California. As discussed above, white physicians are less likely than URM physicians to work in high Hispanic MSSA areas where bilingual skills are of particular utility. Among Spanish speaking physicians, there is a wide diversity in the composition of Spanish speakers. Nine percent of Spanish speaking physicians are Asian and Pacific Islander, 4% are Black and 2% are Native American or other ethnicity.

Figure 10: Racial/Ethnic Distribution of Spanish Speaking Physicians



The pattern is much different when looking at physicians who speak Asian languages. While many non-Latino physicians speak Spanish, there are very few non-East Asian physicians who speak East Asian languages (Figure 11). Of all physicians who speak East Asian languages, 97% are Asian physicians.

Figure 11: Racial /Ethnic Distribution of East Asian Language Speaking Physicians



KEY FINDINGS

Several key findings from these analyses merit highlighting:

1. **The underrepresentation of Latinos and African Americans among California physicians remains dire.** Findings from the California Medical Board survey confirm the severe underrepresentation of Latinos and African Americans in the state's physician workforce. The disparity is particularly acute for Latinos, who constitute one-third of the state's population but only 5% of its physicians.

2. **California has very few physicians of Samoan, Cambodian, and Hmong/Laotian ethnicity, and these ethnic groups should also be recognized as underrepresented in medicine and more actively recruited into the profession.** A major strength of the California Medical Board survey is the unprecedented ability to examine variations within major ethnic groups. This is particularly an asset for detecting variations within Asian ethnic groups and revealing specific Asian ethnicities which are underrepresented in medicine.

3. **Minority physicians in California play a key role in underserved communities. Minority physicians in California are much more likely than white physicians to practice in Medically Underserved Areas, Health Professions Shortage Areas, communities with high proportions of minority populations, and low income communities.** This pattern is particularly true for the traditionally underrepresented physician ethnic groups (African Americans, Latinos, and Native Americans), but also holds to a lesser degree for physicians from other non-white ethnic groups.

4. **Minority physicians in California are much more likely than white physicians to work in primary care (family medicine, general internal medicine, and general pediatrics).** Over 40% of minority physicians practice in generalist primary care fields, compared with 30% of white physicians. As concerns grow about the crisis in primary care in California, this finding demonstrates another strategic role of minority

physicians in the state.

5. **California physicians speak many languages in addition to English.** Nearly one in five physicians in the state reports fluency in Spanish, including many non-Latino physicians. In contrast, fluency in Asian languages is largely limited to physicians of Asian ethnicity.

6. **The California Medical Board survey represents a major step forward in the ability of the state to have reasonably accurate and complete data on key characteristics of California physicians, and is a valuable resource for physician workforce analysis and planning in the state.**

RECOMMENDATIONS

Experience from decades of efforts to increase health workforce diversity has made it clear that there is no single magic bullet to accomplish this objective. Increasing the numbers of physicians in California from underrepresented ethnic groups will require sustained, multi-pronged efforts ranging from initiatives to improve public K-12 education to regulatory interventions aimed at health care institutions. The Institute of Medicine, the Sullivan Commission on Diversity in the Healthcare Workforce, and other groups have recently issued reports proposing comprehensive strategies for improving the diversity of physicians and other health professionals.[vii] In California, The Public Health Institute under the sponsorship of The California Endowment is formulating a health professions diversity plan entitled "Connecting the Dots," and a Health Workforce Diversity Council appointed by the leaders of state health agencies is currently developing a set of recommendations for the Department of Health and Human Services. The following recommendations are consistent with the key elements of those reports and initiatives.

1. **Invest in the educational pipeline preparing minority and disadvantaged students for careers in medicine and other health professions.**

   A systematic review of the research literature on health professions-focused pipeline interventions determined that a critical mass of well-conducted studies support the effectiveness of these types of interventions, particularly at the college and postbaccalaureate level.[viii] Pipeline interventions are associated with positive outcomes for URM and disadvantaged students on several meaningful metrics, including academic performance and likelihood of enrolling in a health professions school. Two prominent federal programs traditionally supporting a wide range of pipeline activities in California and other states have been the Health Careers Opportunities Program (HCOP) and Centers of Excellence (COE) Program, both administered by the Health Services Resources Administration. Funding was recently drastically reduced for these programs, with HCOP funding cut from $35.6M in FY2005 to $4.0M in FY2006, and COE funding reduced from $33.6M to $11.9M, jeopardizing the continuation of many activities in California formerly supported by this funding. There is a critical need for state government, private philanthropy, and private sector stakeholders in the health industry to invest in fortification and expansion of health professions pipeline programs in California.

2. **Promote diversity as a key part of expanding California medical education to increase the representation of minority and disadvantaged students.**

   Emphasizing the recruitment and retention of URM students in current plans to expand medical school capacity in California is critical to promoting diversity in the physician workforce. The University of California is developing a 4-year medical school at UC Riverside and planning a new medical school at UC Merced. Locating new medical schools in these regions, which are characterized by large minority populations and high unmet medical need, represents a strategic opportunity to recruit students from these regions into medical school, diversify medical school enrollment in the state, and respond to the compelling health needs of underserved regions. In

addition, the new University of California Program in Medical Education (PRIME) initiative is increasing medical school enrollment at existing UC medical schools through new tracks devoted to preparing students to care for underserved communities. These tracks provide another opportunity to emphasize the importance of workforce diversity for meeting needs of the state's underserved communities. Continued state support is necessary to move forward with these new initiatives in UC medical school expansion, along with ongoing assessment of how medical school expansion in California is addressing the state's need for greater workforce diversity.

3. **Hold health professions schools accountable for an institutional culture and environment that promotes diversity and recruitment and retention of underrepresented minorities.**

   The Institute of Medicine and Sullivan Commission reports cite examples of best practices at medical schools and other health professions educational institutions for promoting diversity of the student body and faculty. Key ingredients include grass roots activism among students, faculty and staff, commitment at the highest levels of institutional leadership, reconsideration of admissions processes, and explicit mission statements, action plans and institutional policies that embrace diversity as critical to institutional excellence. It is also apparent that "whole file" approaches to comprehensively assessing the qualifications of medical school applicants can comply with the legal parameters of Proposition 209. State government could exert leadership in this area by holding an annual hearing in conjunction with leaders of professional organizations and medical schools in the state to review the status of physician and medical student diversity in California and evaluate progress towards diversity goals.

4. **Increase incentives for physicians to work in underserved communities in California, including greater state investment in physician loan repayment programs such as the National Health Service Corps/California State Loan Repayment Program and the Steven M. Thompson Physician Corps Loan**

Repayment Program.

State-based funding for recruitment and retention programs focused on underserved communities must continue to have adequate funding to support the physician workforce in minority communities. These programs support the health care safety net and fill major gaps in recruiting and retaining physicians from diverse backgrounds to work in medically underserved areas.

5. **Implement a relicensure survey for doctors of osteopathy administered by the California Osteopathic Medical Board, and provide the resources to institutionalize the California Medical Board and California Osteopathic Medical Board surveys and production of regular analyses of these survey data.**

   The findings displayed in this report highlight the value of the recently implemented Medical Board survey for providing more reliable and policy-relevant information on the physician workforce in California. Extending the survey to doctors of osteopathy would fill a major gap in information on the state's physician workforce. SB 139, authored by Senator Scott and signed into law in 2007, calls for the Office of Statewide Health Planning and Development to establish a state health care workforce clearinghouse. This clearinghouse offers a welcome opportunity for synthesizing data from relicensure-linked health professions surveys to produce regular, informative reports on California's health professions.

REFERENCES

[i] C. Dower, T. McRee, K. Grumbach, B. Briggance, S. Mutha, J. Coffman, K. Vranizan, A. Bindman, E. H. O'Neil. The Practice of Medicine in California: A Profile of the Physician Workforce. Center for the Health Professions; University of California, San Francisco. 2001. J.Coffman, B. Quinn, T. Brown, R. Scheffler. Is There a Doctor in the House? An Examination of the Physician Workforce in California Over the Past 25 Years. Nicholas C. Petris Center on Health Care Markets and Consumer Welfare, University of California, Berkeley, 2003.

[ii] Field Research Corporation. A Survey of California Voters about Diversity in the Health Professions. September 6, 2007.

[iii] C. Dower, T. McRee, K. Grumbach, B. Briggance, S. Mutha, J. Coffman, K. Vranizan, A. Bindman, E. H. O'Neil. The Practice of Medicine in California: A Profile of the Physician Workforce. Center for the Health Professions; University of California, San Francisco. 2001. J.Coffman, B. Quinn, T. Brown, R. Scheffler. Is There a Doctor in the House? An Examination of the Physician Workforce in California Over the Past 25 Years. Nicholas C. Petris Center on Health Care Markets and Consumer Welfare, University of California, Berkeley, 2003.

[iv] Many physicians who obtain a California license but relocate to another state to practice maintain an active California license to avoid the cumbersome process of applying for a new license should they decide to return to practice in the state.

[v] The protocol assigned physicians who reported more than one ethnicity to a single ethnic group based on the following protocol: a physician who reported African American and another ethnicity was assigned to the African American group, a physician who reported Latino but not African American was assigned to the Latino group, and so forth for Native Americans, Asian-Pacific Islanders, and White, in that rank order.

[vi] Grumbach K, Hart LG, Mertz E, Coffman J, Palazzo L.Who is Caring for the Underserved? A Comparison of Primary Care Physicians and Non-physician Clinicians in California and Washington. Ann Fam Med 2003:97-104.

[vii] BD Smedley, AS Butler, LR Bristow, “In the Nation's Compelling Interest: Ensuring Diversity in the Health-Care Workforce” (Washington, DC: The National Academies Press, 2004). Sullivan Commission on Diversity in the Healthcare Workforce, “Missing Persons: Minorities in the Health Professions,” (2004). K. Grumbach, J. Coffman, E. Rosenoff, C. Muñoz, P. Gandara and E. Sepulveda. Strategies for improving the diversity of the health professions. The California Endowment. 2003.

[viii] K. Grumbach, J. Coffman, E. Rosenoff, C. Muñoz, P. Gandara and E. Sepulveda. Strategies for Improving the Diversity of the Health Professions. The California Endowment, 2003.

Appendix 1: California Medical Board Survey

SHADE CIRCLES LIKE THIS ●

RENEWAL APPLICATION (CONTINUED)

CONTINUING MEDICAL EDUCATION – **Read each statement carefully and mark the appropriate answer. Your signature is required in Box D on the reverse side of this form.**

O Yes O No I have completed CME and can document an average of 25 hours of approved CME each calendar year, resulting in a minimum of 100 hours over the last 4 years.

O Yes O No I have completed 12 hours of pain management and end-of-life care (must be completed by December 31, 2006).

O Yes O No I am exempted from the completion of 12 hours of pain management and end-of-life care continuing education requirement because I am a radiologist or pathologist.

ONLY for general internists and family physicians who have 25% of their patient population aged 65 years or older:

O Yes O No I have completed at least 20% of the required CME in geriatric medicine or the care of older patients.

PHYSICIAN SURVEY

The Medical Board requires completion of Sections 1, 2, 3, and 4 of this survey pursuant to B&P Code sections 2425.1 and 2425.3.

The survey information collected will be publicly available in accordance with state law.

1. ACTIVITIES IN MEDICINE

Indicate hours per week for each of the following activities.
Fill in one circle on each line:

	None	1–9	10–19	20–29	30–39	40+
Patient Care	O	O	O	O	O	O
Research	O	O	O	O	O	O
Teaching	O	O	O	O	O	O
Administration	O	O	O	O	O	O
Other	O	O	O	O	O	O

2. PRACTICE LOCATION

If you provide patient care, indicate the zip code of your primary practice location (U.S. only).

3. CURRENT TRAINING STATUS

O Resident
O Fellow
O Not in Training

4. MEDICAL PRACTICE/SPECIALTY and BOARD CERTIFICATIONS

Mark all specialty classifications in your: primary practice area (1°); secondary practice area (2°), if applicable; and board certifications (Bd Cert) by an American Board of Medical Specialties' board or by the American Board of Facial Plastic & Reconstructive Surgery, the American Board of Pain Medicine, the American Board of Sleep Medicine, or the American Board of Spine Surgery. **(Please take the time to be accurate and complete, as this information will be posted on your profile on the Medical Board's Web site.)**

1°	2°	Bd Cert	
O	O	O	Aerospace Medicine
O	O	O	Allergy & Immunology
O	O	O	Anesthesiology
O	O	O	Cardiology
O	O	O	Colon & Rectal Surgery
O	O		Complementary & Alternative Medicine
O	O		Cosmetic Surgery
O	O	O	Critical Care
O	O	O	Dermatology
O	O	O	Emergency Medicine
O	O	O	Endocrinology
O	O	O	Facial, Plastic & Reconstructive Surgery
O	O	O	Family Practice
O	O	O	Gastroenterology
O	O		General Practice
O	O	O	General Surgery
O	O	O	Geriatric Medicine
O	O	O	Hematology
O	O	O	Infectious Disease
O	O	O	Internal Medicine
O	O	O	Medical Genetics
O	O	O	Neonatal Perinatal Med.
O	O	O	Nephrology
O	O	O	Neurological Surgery
O	O	O	Neurology
O	O	O	Nuclear Medicine
O	O	O	Obstetrics & Gynecology
O	O	O	Occupational Medicine
O	O	O	Oncology
O	O	O	Ophthalmology
O	O	O	Orthopedic Surgery
O	O	O	Otolaryngology
O	O	O	Pain Medicine
O	O	O	Pathology
O	O	O	Pediatrics
O	O	O	Physical Medicine & Rehabilitation
O	O	O	Plastic Surgery
O	O	O	Psychiatry
O	O	O	Public Health & General Preventive Med
O	O	O	Pulmonology
O	O	O	Radiation Oncology
O	O	O	Radiology
O	O	O	Rheumatology
O	O	O	Sleep Medicine
O	O	O	Spine Surgery
O	O	O	Sports Medicine
O	O	O	Surgical Oncology
O	O	O	Thoracic Surgery
O	O	O	Urology
O	O	O	Vascular Surgery
O	O	O	Other

5. POSTGRADUATE TRAINING

– Indicate the total years of training after medical school (approved by either the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada) you have completed:

O 1 O 2 O 3 O 4 O 5 O 6 O 7 O 8 O 9+

6. ETHNIC BACKGROUND

– Indicate your ethnic background (you may select more than one):

O African American/Black/African
O American Indian/Native American/Alaskan Native
O Caucasian/White/European/Middle Eastern
O Other (not listed)
O Decline to State

Asian
O Cambodian O Japanese O Thai
O Chinese O Korean O Vietnamese
O Indian O Laotian/Hmong O Other Asian
O Indonesian O Pakistani

Latino/Hispanic
O Central American O Cuban O Mexican
O South American
O Other Hispanic
O Puerto Rican

Native Hawaiian/Pacific Islander
O Fijian O Samoan
O Filipino O Tongan
O Guamanian O Other Pacific Islander
O Hawaiian

7. FOREIGN LANGUAGE

– In addition to English, indicate additional languages in which you are fluent:

O American Sign Language O Cantonese O Hebrew O Italian O Mandarin O Mien O Russian O Thai
O Arabic O Farsi O Hindi O Japanese O Other Chinese O Polish O Samoan O Turkish
O Armenian O French O Hmong O Korean O Other Non-English O Portuguese O Spanish O Vietnamese
O Cambodian O German O Ilacano O Lao O Other Sign language O Punjabi O Tagalog O Decline to State

Appendix 2:

California Counties by Region

Bay Area	North Valley/Sierra	Central Valley/Sierra	Inland Empire	Orange	Central Coast	North Counties	South Valley/Sierra	Los Angeles	San Diego
Alameda	El Dorado	Alpine	Inyo	Orange	Monterey	Butte	Merced	Los Angeles	Imperial
Contra Costa	Nevada	Amador	Mono		San Benito	Colusa	Fresno		San Diego
Marin	Placer	Calaveras	Riverside		San Luis Obisbo	Del Norte	Kern		
Napa	Sacramento	San Joaquin	San Bernardino		Santa Barbara	Glenn	Kings		
San Francisco	Sierra	Stanislaus			Ventura	Humboldt	Madera		
San Mateo	Sutter	Tuolumne				Lake	Mariposa		
Santa Clara	Yolo					Lassen	Tulare		
Solano	Yuba					Mendocino			
Sonoma						Modoc			
Santa Cruz						Plumas			
						Shasta			
						Siskiyou			
						Tehama			
						Trinity			

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Appendix 3: Health Profession Shortage Areas by Region

Bay Area	North Valley/Sierra	Central Valley/Sierra	Orange County
Freedom/Watsonville	South Lake Tahoe	Angels Camp/Arnold/Copperopolis/Mountain Ranch/Murphys/San Andreas/Valley Springs/West Point	Anaheim Central
Cloverdale	North Bloomfield/North San Juan/Truckee	Lathrop/Manteca	
Bernal Heights/Mission District/Potrero	Foresthill	Denair/Turlock	
Ashland/Brookfield Village/Castro Valley South/Elmhurst/Hayward Northeast/San Leandro North Central	Florin/Fruitridge/Oak Park/Parkway/South Sacramento	Crows Landing/Empire/Grayson/Newman/Patterson/Westley	
Gilroy/Morgan Hill/Rucker/San Martin	Camino/Pollock Pines	Banta/Escalon/Ripon/Vernalis	
Bolinas/Dillon Beach/Inverness/Point Reyes Station/Stinson Beach/Tomales	Colfax/Meadow Vista	Ceres/Modesto South Central	
Bishop/Bishop Paiute Tribe/Mustang Mesa/Round Valley/West Bishop/Wilkerson	Garden Valley/Georgetown/Greenwood/Kelsey/Volcanoville	Oakdale/Riverbank	
Boyes Hot Springs/Glen Ellen/Kenwood/Sonoma/Vineburg	Meridian/Robbins/Yuba City	French Camp/Stockton South/Stockton Southeast	
Bayview/Candlestick/Hunters Point/Portola/Visitacion Valley	Dollar Point/Kings Beach/Sunnyside/Tahoe City/Tahoe Vista		
Fruitvale/Melrose/Oakland Airport			
Hollister/Paicines/Panoche/San Juan Bautista			
East Menlo Park/East Palo Alto/North Fair Oaks/Redwood City East			

Note: HPSAs are designated by the federal government based on several criteria, including having less than 1 primary care physician for every 3,500 residents. We counted MSSAs as a HPSA if any portion of the area was designated a geographic or population HPSA.

Appendix 3: Health Profession Shortage Areas by Region (continued)

Inland Empire	North County	Central Coast
Juniper Hills/Littlerock/Longview/Pearblossom/Valyermo Big Bear Lake/Fawnskin/Moorridge/Running Springs/Sugarloaf| Bloomington/Colton Central and West/Fontana South/Rialto South Blue Jay/Crestline/Lake Arrowhead/Skyforest/Twin Peaks Joshua Tree/Landers/Morongo Valley/Rimrock/Yucca Valley Boron/California City/Desert Lake/Mojave/North Edwards/Rosamond Arabia/Coachella/Desert Beach/Flowing Wells/Indio South/La Quinta East/Mecca/Oasis/Thermal Fontana North/Rancho Cucamonga Northwest/Rialto Northeast Cadiz/Twentynine Palms East Hemet/Hemet/Valle Vista Charleston View/Furnace Creek/Panamint/Shoshone/Stovepipe Wells/Tecopa/Timbisha Idyllwild/Pine Cove Eastside/Fairmont Park/Riverside Downtown/Rubidoux/University	Gazelle/Grenada/Hilt/Hornbrook/Yreka Laytonville/Leggett/Piercy Junction City/Salyer Anderson/Cottonwood/French Gulch/Happy Valley/Igo/Ono/Platina/Shasta Bucks Lake/Cromberg/East Quincy/Greenhorn/Keddie/Laporte/Little Grass Valley/Meadow Valley/Quincy/Sloat Belden/Caribou/Crescent Mills/Genessee/Greenville/Indian Falls/North Arm/Storrie/Taylorsville/Tobin/Twain Doyle Artois/Elk Creek/Glenn/Grindstone Indian Rancheria/Willows Susanville Surprise Valley Bluelake/McKinleyville/Orick/Trinidad Douglas City/Lewiston/Trinity Center/Weaverville Cobb/Hidden Valley/Middletown Lucerne/Nice/Upper Lake Magalia/Paradise/Stirling City Kettenpom/Mad River/Ruth/Xenia Brooktrails/Pine Mountain/Willits Kelseyville/Lakeport Williams Ferndale/Fortuna/Rio Dell/Scotia Garberville/Redway Hoopa/Willow Creek Arcata/Eureka Colusa Happy Alturas/Canby Covelo/Dos Rios Boonville/Navarro/Philo/Yorkville Crescent City/Gasquet/Klamath/Smith River Bieber/Madeline/Nubieber Manton/Millville/Shingletown/Viola Gerber/Los Flores/Proberta/Red Bluff Oroville/Palermo/Thermalito Bailey Creek/Canyondam/Chester/Eastshore/Foxwood/Hamilton Branch/Lake Almanor Peninsula/Lake Almanor Pen.. Burney/Cassel/Fall River Mills/Hat Creek/McArthur Etna/Fort Jones/Greenview Corning/Los Molinos/Tehama/Vina	Lompoc/Mission Hills/Vandenberg | Ventura| King City/San Lucas Atascadero/Templeton El Paso de Robles/Lake Nacimiento/San Miguel/Shandon Guadalupe Arroyo Grande/Nipomo/Oceano/Pismo Beach | Oxnard North Central Chualar/Gonzalez/Greenfield/Soledad | Fillmore/Los Padres National Forest/Piru/Santa Paula/Saticoy

Appendix 3: Health Profession Shortage Areas by Region (continued)

South Valley/Sierra	Los Angeles	San Diego
Lost Hills/Wasco Coalinga Bear Valley Springs/Keene/Stallion Springs/Tehachapi Alta Sierra/Bodfish/Glennville/Kernville/Lake Isabella/Weldon/Wofford Heights Bakersfield East/Lakeview/La Loma Arvin/Lamont/Weed Patch Chowchilla Oakhurst/Yosemite Lakes Auberry/Calwa/Centerville/Clovis East/Del Rey/Fowler/Friant/Sanger/Shaver Lake Cutler-Orosi Huron Madera Fresno South and West Bowles/Caruthers/Easton/Kingsburg/Lanare/Laton/Raisin City/Riverdale/Selma Delano/McFarland Shafter Dinuba Big Oak Flat/Groveland Yosemite Valley Orange Cove/Parlier/Reedley/Squaw Valley/Tivy Valley/Wonder Valley Dos Palos/Gustine/Los Banos Firebaugh/Mendota Alpaugh/Earlimart/Pixley/Porterville/Rich Grove/Terra Bella Cantua Creek/San Joaquin/Tranquility Exeter/Lemon Cove/Lindsay/Strathmore Bootjack/Cathey's Valley/Coulterville/Don Pedro/El Portal/Fish Camp/Mariposa Biola/Herndon/Highway City/Kerman Avenal Buttonwillow Ballico/Cressey/Delhi/Hilmar/Livingston Corcoran/Kettleman City/Stratford Tipton/Tulare/Woodville Armona/Hanford/Lemoore Chinese Camp Blackwell's Corners/Ford City/Maricopa/McKittrick/Taft	Altadena West/Pasadena Northwest Bell Southwest/Cudahy/Vernon El Sereno North/Highland Park/Montecito Heights/Monterey Hills Pomona East and South Compton East Pacoima East/Sun Valley West Crenshaw/Culver City East/Mid-City South/West Adams Granada Hills/Mission Hills/Porter Ranch Lake Los Angeles Pico-Union Avalon Long Beach Port/San Pedro East/Wilmington Exposition Park/Leimert Park South Central Southwest Mar Vista/Ocean Park/Santa Monica South/Venice Firestone/Florence South City Terrace East/East Los Angeles Bassett/Industry West/La Puente Watts/Willowbrook | Van Nuys Central | South Central Northeast	Chollas Creek/City Heights/East San Diego/North Park/Oak Park/South Oceanside East/San Marcos West/Vista Encinitas Central/Leucadia/Oceanside North and West/San Luis Rey/South Oceanside Brawley/Westmorland Borrego Springs/Cuyamaca/Julian/Kentwood in the Pines/Laguna/Ocotillo Wells/Palomar/Pine Valley/Warner S Bombay Beach/Calipatria/Desert Shores/Niland/Salton City/Salton Sea Beach El Centro/Heber/Holtville/Imperial/Seeley Calexico/Ocotillo Downtown/Golden Hill/Logan Heights

Appendix 4: OSPHD Health Profession Shortage Area Map