

**Holding onto Our Own:
Migration Patterns of
Underrepresented Minority Californians
in Medicine**

Detailed Research Findings from the Authors' Pages

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The views presented in this issue brief are those of the authors and not necessarily those of the California Program on Access to Care, the University of California or the Association of American Medical Colleges.

Latinos, African-Americans and Native Americans are underrepresented in California's physician workforce. Underrepresentation of these racial/ethnic groups in medicine is a serious problem in California. Many medically underserved areas in the state have large Latino and African-American populations.¹ Increasing the number of underrepresented minority physicians can alleviate physician shortages in underserved areas because underrepresented minority physicians are more likely to practice in these areas. Furthermore, studies have shown that patient satisfaction is enhanced when practitioners and patients are from the same racial or ethnic group.²

The number of underrepresented minority Californians enrolling in any medical school has declined dramatically since the debate over medical school admissions policies began in the early 1990s.³ This debate culminated in the University of California Regents' decision in 1995 to prohibit consideration of race in admissions to UC campuses and the enactment of Proposition 209 in 1996. The number of underrepresented minority Californians who entered any medical school fell from a high of 310 in 1994 to 258 in 1999, a decline of 17%.⁴ ("Californians" are defined as persons who were legal residents of California at the time they entered medical school.)

During the 1990s there was also a shift in the locations where underrepresented minority Californians attended medical school. The percentage of underrepresented minority Californians entering medical school who enrolled in California medical schools decreased from 59% in 1993 to 43% in 1999.⁵ Some leaders have expressed concern about this trend because they fear that underrepresented minority Californians who attend medical school in other states will not return to California to practice.

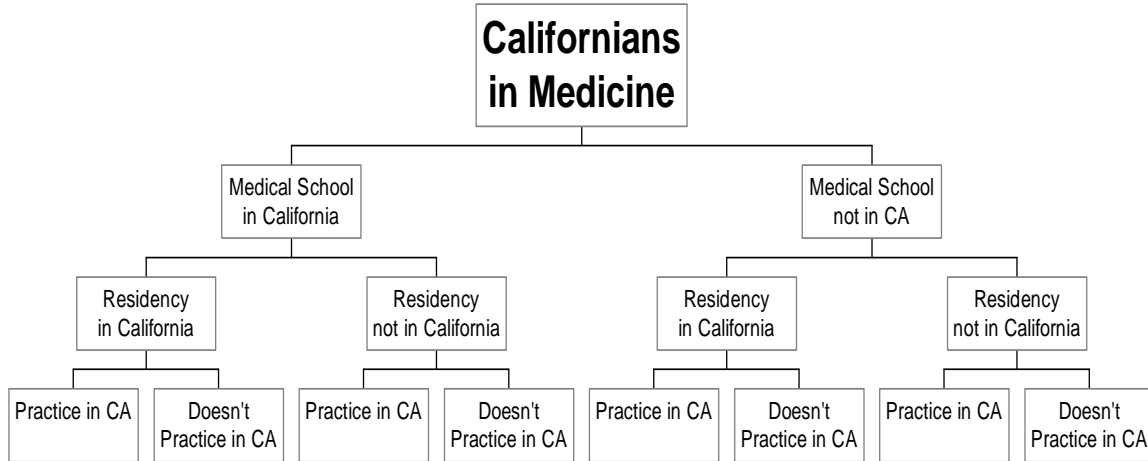
This study was undertaken to assess the relationship between practice location and location of medical school and residency. Data on Californians pursuing careers in medicine were analyzed to determine whether underrepresented minority Californians who complete medical school and/or residency in California are more likely to practice in California. The study also assessed whether migration patterns differ among racial/ethnic groups.

Data on location of medical school and residency were analyzed for Californians who graduated from medical school between 1985 and 1999. For location of practice, data were analyzed for Californians who graduated from medical school between 1985 and 1992. More recent graduates were excluded from the analysis of practice location because many of them have not yet finished residency.

Pathways from Medical Education to Practice

Figure 1 illustrates the eight possible pathways for Californians pursuing careers in medicine. The diagram illustrates that medical education is a two-stage process in the United States. As indicated in the second row of the diagram, Californians may enter a medical school in California or a medical school in another state. This choice will depend on where an individual is admitted, how much financial aid s/he is offered and personal preferences. Once a physician completes medical school, s/he must select a residency program. As indicated in the third row of the diagram, Californians who attend medical school in California may remain in California for residency, or they may decide to enroll in a residency program in another state. Similarly, Californians who attend medical schools in other states may choose to return to California for residency or to remain outside the state. Once a Californian completes residency, s/he will decide where to practice, with some practicing in California and others practicing in other states.

Figure 1
Medical Education Pathways



Major Findings

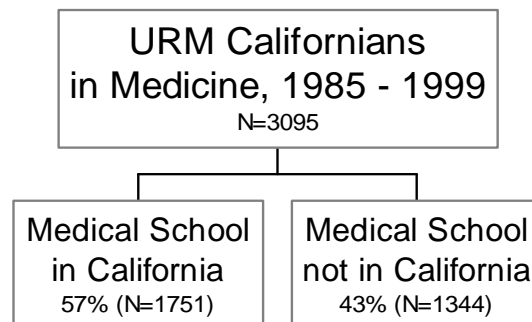
Medical School Enrollment

The number of Californians attending medical school far exceeds the capacity of California's medical schools. In 1999, a total of 1,868 Californians enrolled in medical school as **first-year students**. Forty-four percent entered California medical schools and 56% entered medical schools in other states. Even though California has nine medical schools, it exports more medical students to out-of-state schools than any other state.⁶ The percentage of Californians of all racial/ethnic groups who **graduate** from out-of-state medical schools has increased over the past 15 years, from 45% in 1985 to 54% in 1999.⁷

Figure 2 displays the location of medical school for all underrepresented minority Californians who graduated from medical school between 1985 and 1999. As the figure illustrates, 57% graduated from a medical school located in California (1,751 of 3,095 persons).

Figure 2

**Location of Medical School for
Underrepresented Minority (URM) Californians
1985-1999 Medical School Graduates**



Location of medical school differs significantly across racial ethnic groups. As Figure 3 shows, Mexican-American and Other Hispanic Californians have been more likely than Californians from other racial/ethnic groups to attend medical school in California. Among Californians graduating from medical school between 1985 and 1999, 64% of Mexican-Americans and 60% of Other Hispanics attended California medical schools. In contrast, only 42% of non-Hispanic whites, 44% of Asians, and 50% of Blacks attended California schools.

Figure 3

**Location of Medical School for Californians by Race/Ethnicity
1985-1999 Medical School Graduates**

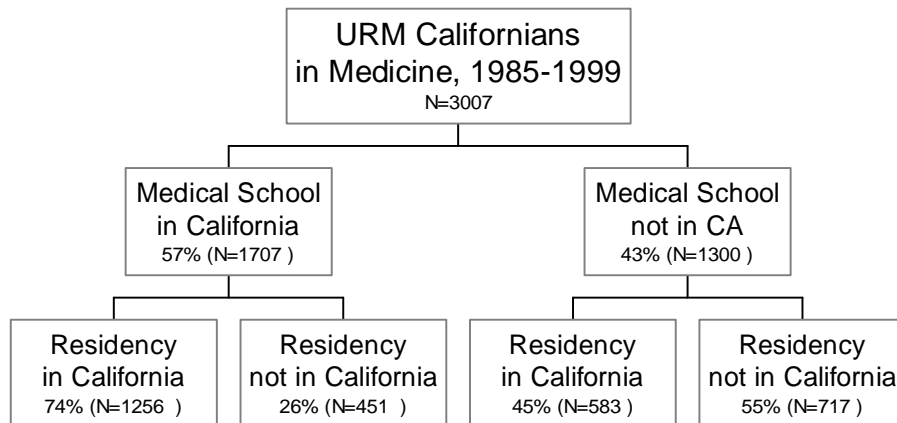
Race/Ethnicity	Number of Californians Graduating from Any Medical School	Number Graduating from a California Medical School	Percent Graduating from a California Medical School
All racial/ethnic groups	24852	11161	45%
Underrepresented Minorities	3095	1751	57%
White	14941	6307	42%
Asian	6178	2727	44%
Black	1299	652	50%
Mexican-American	1529	974	64%
Other Hispanic	562	335	60%
Puerto Rican	100	45	45%
Native American	167	80	48%
Other	76	41	54%

Residency Training

Location of residency is an important predictor of practice location.⁸ Approximately 70% of physicians who complete residency in California remain in the state to practice, a higher percentage than any other state.⁹

As Figure 4 indicates, among underrepresented minority Californians who graduated from medical school between 1985 and 1999, two thirds entered residency programs in California (1,839 persons) and one third entered residency programs in other states (1,168 persons). Those who attended medical school in California were much more likely to enter residency programs in California (74% versus 55%). This finding suggests that **increasing the number of underrepresented minorities Californians attending California medical schools may lead to an increase in the number entering residency in California which may, in turn, increase the likelihood that they will practice in California.**

Figure 4
Location of Residency Training for
Underrepresented Minority (URM) Californians,
1985-1999 Medical School Graduates



Note: Difference in total number for Figures 2 and 4 is due to missing information about location of residency training for some medical school graduates.

Mexican-Americans, Other Hispanics and Asian/Pacific Islanders were the racial/ethnic groups most likely to complete residency in California regardless of where they attended medical school (See Figure 5). Among Californians who graduated from medical school between 1985 and 1999, 70% of Mexican-Americans, 64% of Other Hispanics and 62% of Asian/Pacific Islanders completed residency in California. In contrast only 52% of non-Hispanic whites and Blacks completed residency in California.

Figure 5

**Location of Residency Training for Californians by Race/Ethnicity
1985-1999 Medical School Graduates**

Race/Ethnicity	Number of Californians Completing Residency Training	Number Completing a California Residency Program	Percent Completing a California Residency Program
All racial/ethnic groups	24299	13645	56%
Underrepresented Minorities	3007	1839	61%
White	14637	7640	52%
Asian	6032	3762	62%
Black	1265	659	52%
Mexican-American	1490	1037	70%
Other Hispanic	550	352	64%
Puerto Rican	94	44	47%
Native American	158	99	63%
Other	73	52	71%

Practice

Approximately 40% of Californians who graduated from any medical school between 1985 and 1992, currently practice in California.¹⁰ Underrepresented minority Californians were slightly more likely to practice in California than other Californians (42% versus 39%). As Figure 6 illustrates, underrepresented minority Californians who completed residency in California were much more likely to practice in California than those who completed residency in other states. This finding suggests that **increasing the number of underrepresented minority Californians in California’s residency programs is another important strategy for increasing the state’s supply of underrepresented minority physicians.**

Figure 6
Location of Practice
Underrepresented Minority Californians
1985-1992 Medical School Graduates*

	Total	Practice in California	
Location of Medical School and Residency Training	Number	Number	Percent
All Underrepresented Minority Californians	1495	625	42%
Medical school in California, Residency Training in California	611	359	59%
Medical school in California, Residency Training not in California	203	35	17%
Medical school not in California, Residency Training in California	345	195	57%
Medical school not in California, Residency Training not in California	336	36	11%

* Data are reported only for underrepresented minority Californians who graduated from medical school as of 1992, because a large percentage of those graduating after 1992 are still in residency.

Among underrepresented minority Californians practicing in California, over half (57%) completed both medical school and residency in California. Approximately one third (31%) attended medical school in other states but returned to California for residency. Underrepresented minority Californians who completed residency in other states accounted for only 12% of those practicing in California. (See Figure 7.) These findings reinforce the conclusion that **increasing the number of underrepresented minority Californians completing medical school in California would increase the number practicing in California, provided these individuals are retained in California for residency.** Those who leave California to complete residency training in other states are highly unlikely to return to California for practice.

Figure 7

**Underrepresented Minority Californians Practicing in California
By Location of Medical School and Residency,
1985-1992 Medical School Graduates**

Location of Medical School and Residency	Number	Percent
All URM Californians Practicing in California	625	100%
Medical School and Residency in California	359	57%
Medical School in California, Residency not in California	35	6%
Medical School not in California, Residency in California	195	31%
Medical School and Residency not in California	36	6%

* Data are reported only for underrepresented minority Californians who graduated from medical school as of 1992, because a large percentage of those graduating after 1992 are still in residency.

Regardless of where they completed medical school and residency training, Mexican-American, Other Hispanic and Asian/Pacific Islander Californians were more likely to ultimately practice in California than other racial/ethnic groups. Among Californians graduating from medical school between 1985 and 1992, 49% of Mexican-Americans,

46% of Other Hispanics and 45% of Asian/Pacific Islanders practice in California. In contrast, only 37% of whites and 35% of African-Americans practice in California.

Recommendations

Medical School

This study found that underrepresented minorities who attend California medical schools are more likely to enter residency programs in California and remain in the state to practice. Thus, increasing the number of underrepresented minority Californians attending in-state medical schools would help increase the supply of underrepresented minority physicians in California. Increasing the number of underrepresented minority medical students would also help California address persistent shortages of physicians in rural and inner-city areas, because underrepresented minority physicians are more likely to practice in underserved areas.

Recommendation 1:

Strengthen efforts to increase the number of underrepresented minority students in California medical schools.

Specific strategies should include expansion of outreach programs, more extensive recruitment activities, and provision of financial aid packages comparable to those offered by medical schools in other states. Expanding outreach programs would increase the number of underrepresented minority Californians who are academically prepared for admission to medical school. Enhancing recruitment activities could increase the number of underrepresented minority applicants to California medical schools, particularly if additional resources are directed toward colleges and universities with large numbers of underrepresented minority students. Better financial aid packages would enable California medical schools to compete more successfully with medical schools in other states for underrepresented minority students. Special financial aid packages could be made available to students who agree to practice in an underserved area of California upon completion of residency.

Recommendation 2:**Expand the Charles Drew/UCLA Undergraduate Medical Education Program.**

The Charles R. Drew/UCLA Undergraduate Medical Education Program was established in 1978. The program is administered by the Charles R. Drew University of Medicine and Science (Drew), which is located in an impoverished area of Los Angeles with a predominantly African-American and Latino population. Drew's mission is to educate health professionals who intend to practice in medically underserved communities and to provide care to disadvantaged populations. Students enrolled in the Drew/UCLA Medical Education Program complete the first two years of basic science courses at the UCLA School of Medicine. The last two years of clinical education are completed at Martin Luther King, Jr., Medical Center, a public hospital affiliated with Drew, and a community health center.

The Drew/UCLA program has been highly successful in recruiting underrepresented minority medical students. Underrepresented minorities constituted 75% of entrants to the Drew/UCLA program in 1999, a much higher percentage than that of any other medical school in California.¹¹ At present the program is quite small, with approximately 25 first-year students admitted each year. Given that California has an ample overall supply of physicians with pockets of underservice in inner-city and rural areas, increasing enrollment in the Drew/UCLA program is a prudent approach to addressing the state's physician workforce needs. Increasing the size of the entering class of the Drew/UCLA program would significantly increase the cadre of physicians likely to provide care to underserved populations but would not significantly increase the number of physicians practicing in the state.

Recommendation #3:

Develop a new University of California program in the Central Valley to prepare additional medical students who are dedicated to practicing in California's underserved communities.

Medical education programs that emphasize preparation of physicians who intend to practice in underserved areas are an effective strategy for increasing the number of physicians who provide care to underserved populations. California's Central Valley is one of the most underserved areas of the state. Latinos constitute at least one third of the population of most counties in this region. Recent immigrants from Southeast Asia are a growing population in many counties as well.¹² These counties also have some of the highest rates of infant mortality and teen births in the state.¹³ At the present time, there are no medical schools in the Central Valley.

The development of a new University of California medical education program in the Central Valley would increase the number of physicians practicing in this region. Criteria for admission to this program should include personal characteristics that predispose physicians to provide care to underserved populations. A recent study published in the *American Journal of Public Health* identified four factors that predict a physician's likelihood of providing care to underserved populations. Three of these factors can be determined at the time of admission to medical school: (1) being a member of a racial/ethnic group that is underrepresented in medicine, (2) expression of strong interest in practicing in an underserved area prior to attending medical school, and (3) growing up in an underserved area.¹⁴

There are three possible models for developing this new medical education program:

1. The first two years of basic science courses occur in a non-medical school university setting, with the last two years of clinical course work shifted to an academic health center setting. An existing example of this model is the UC-Berkeley/UCSF program. A program for the Central Valley could provide basic science curricula at the new UC Merced campus with clinical training administered through the existing UCSF-Fresno Medical Education Program. The UCSF-Fresno Medical Education Program operates medical student clerkships in ten specialties and residency programs in seven specialties. It also administers the Latino Center for Medical Education and Research, which prepares local Latino students for admission to medical school, disseminates information about clerkships and residency programs at UCSF-Fresno to Latino medical students, and trains Latino physicians to serve as faculty and researchers for local training programs.
2. The first two years of basic science courses occur in a comprehensive medical school setting, and the last two clinical years occur in a separate institutional setting focused on underserved communities. An example of this model is the Drew/UCLA program. A new Central Valley Program could allow specially designated students to be admitted to a variety of existing UC medical schools for their basic science education and to then transfer to the UCSF-Fresno Medical Education Program for completion of their clinical training.
3. A comprehensive new medical school campus is created. In this model, an autonomous new medical school would be developed. The medical school campus could be sited at either Fresno or Merced. Clinical training could be administered through the UCSF-Fresno Medical Education Program

The first two models have the advantage of building upon existing educational programs and avoiding the expense of developing an entirely new medical school. They also allow

the opportunity to develop a new program in an incremental fashion. An incremental approach has the advantage of permitting testing of the viability and feasibility of a new program, especially in terms of ability to attract and retain students from disadvantaged backgrounds committed to practicing in underserved communities. Policymakers must be careful not to expand medical school capacity in the state in a manner that simply fuels an oversupply of physicians in already well-served communities, rather than targeting production of new physicians to serve communities most in need.

Residency Training

Underrepresented minority Californians who complete residency in California are much more likely to practice in California, regardless of where they completed medical school. California has approximately 1,900 first-year residency positions.¹⁵ The number of first-year residency positions is 1.6 times the number of graduates of California medical schools, which allows residency programs to admit a large number of persons from out-of-state medical schools.¹⁶ State policymakers should assist California's residency programs in recruiting underrepresented minority Californians and other underrepresented minorities.

Recommendation 4:

Develop a voluntary registry of underrepresented minority Californians enrolled in medical schools throughout the US for use by California residency training programs in recruiting applicants.

At present, there is no readily accessible source of information about the locations where underrepresented minority Californians are attending medical school. A voluntary registry would enable residency programs in California to identify underrepresented minority Californians, thus enhance their ability to focus recruitment efforts on these individuals. Participation in the registry would be voluntary. Access to the registry would be controlled (e.g., password protected web site) to guard against inappropriate release of personal information about participants.

Recommendation 5:

Provide funding to residency training programs in California for efforts to inform underrepresented minority Californians about residency training opportunities in California and to encourage them to apply to these programs.

Residency programs in California generally have limited funds for recruitment of new residents and thus often cannot be very proactive in recruiting underrepresented minority Californians. The State should establish a grant program to support focused recruitment efforts by residency programs. Grant funds could underwrite production of materials, travel, and other methods of communication with underrepresented minority medical students. An incremental approach would be to provide additional appropriations to the Song-Brown Family Physician Training Program for a special initiative to award such grants to family practice residency programs.

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