Annual Report: Update on California's Physician Workforce

by Healthforce Center at UCSF

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Abstract / Overview
The California Revenue and Taxation Code 30130.57 requires the University of California to annually review physician shortages by specialty across the state and by region. This report satisfies that requirement. It provides California policymakers with up-to-date information about the state's physician workforce and the pipeline of trainees in the state's medical schools and graduate medical education (GME) programs, often referred to as residency programs. This report focuses on the five specialties for which the CalMedForce program, established pursuant to Proposition 56, provides grants for residency training: family medicine, internal medicine, pediatrics, obstetrics/gynecology, and emergency medicine.

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Introduction

California continues to face major physician workforce challenges. The National Center for Health Workforce Analysis projects that the state will have a shortage of 1,550 full-time equivalent primary care physicians[1] in 2025 (U.S. Department of Health and Human Services, 2016). California's physicians are also unevenly distributed relative to the state's population (Coffman, Calimlim, & Fix, 2021; Coffman, Fix, & Ko, 2018).

In addition, California continues to have fewer medical students per capita than many other states. As of the 2023-2024 academic year, the median ratio of medical students (MD and DO) per 100,000 population across the 50 states, the District of Columbia, and Puerto Rico was 41, whereas California had a ratio of 23 medical students per 100,000 population in California (Association of American Medical Colleges [AAMC], 2024c). In contrast, the ratio of residents/fellows in programs accredited by the Accreditation Council for Graduate Medical Education (ACGME) per 100,000 population in California (37) is similar to the median ratio of residents/fellows in ACGME-accredited programs for U.S. states and territories (35) (AAMC, 2024c).

Although the numbers of medical school and residency program graduates is growing in California and other states, the number of new graduates practicing in California will not be adequate to replace all physicians who will reach retirement age during the coming decade. In 2023, 25 percent of active physicians in the state were age 65 or older (AAMC, 2024c). In addition, physicians nationwide are working fewer hours than they did in the past (Goldman & Barnett, 2022). Moreover, despite some progress in increasing the racial/ethnic diversity of medical students (Pfeffinger, Fernandez, Tapia, Rios-Fetchko, & Coffman, 2020), the state's physician workforce still does not reflect the racial/ethnic diversity of the state's population.

California's strategies for addressing physician workforce challenges include funding graduate medical education (GME), often referred to as residency, in specialties of high need. Proposition 56, which was approved by voters in 2016, increased California's state tobacco tax and allocated a portion of revenue ($40 million) annually to the University of California (UC) to "sustain, retain, and expand" California's residency training programs. UC contracted with Physicians for a Healthy California to administer a statewide GME grant program, known as CalMedForce. Under the terms of Proposition 56, CalMedForce must provide grants to residency programs in five specialties: emergency medicine, family medicine, general internal medicine, general pediatrics, and obstetrics/gynecology. Combined residency programs that include these specialties, such as internal medicine/pediatrics and internal medicine/psychiatry, are also eligible to apply for CalMedForce grants. CalMedForce is authorized to fund residency programs in other specialties in which shortages exist but has not expanded outside of the five specialties due to high demands for funding within the existing specialties. Grantees are selected based on their ability to expand California's physician workforce with an emphasis on their ability to meet the needs of medically underserved populations.

[1] The National Center for Health Workforce Analysis defines primary care physicians as encompassing family physicians, general internists, general pediatricians, and geriatricians.

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Medical School

Medical Schools in California

California has a total of 16 medical schools. Thirteen medical schools award Doctor of Medicine (MD) degrees, six of which are part of the University of California (i.e., public) and seven of which are private. California also has three medical schools that award Doctor of Osteopathic Medicine (DO) degrees, all of which are private. Eight of the ten private medical schools are not-for-profit (six MD, two DO) and two are for-profit (one MD, one DO). Of the 16 medical schools, 13 had graduates during the 2022-2023 academic year, the most recent year for which data are available for both MD- and DO-granting schools. These medical schools had a total of 1,695 graduates in 2023, of which 1,334 received an MD degree and 361 received a DO degree. Three medical schools are new schools that did not have any students ready to graduate in 2022-2023.

Table 1. Medical Schools in California by Ownership Type, Location, and Number of Graduates

Medical School	City	Initial Year of Accreditation	Number of Graduates, 2021-2022	Number of Graduates, 2022-2023
MD-granting Medical Schools (Allopathic)				
Public				
University of California, Davis	Sacramento	1967	128	108
University of California, Irvine	Irvine	1961	94	103
University of California, Los Angeles	Los Angeles	1951	164	183
University of California, Riverside	Riverside	2012	69	63
University of California, San Diego	La Jolla	1968	113	114
University of California, San Francisco	San Francisco	On or prior to 1942*	149	188
Total Public MD-granting Schools			717	759
Private Not-for-profit				
California University of Science and Medicine	Colton	2018	61	80
Charles R. Drew University of Medicine and Science	Los Angeles	2022	----	----
Kaiser Permanente Bernard J. Tyson	Pasadena	2019	----	----
Loma Linda University	Loma Linda	On or prior to 1942*	152	149
Stanford University	Palo Alto	On or prior to 1942*	88	87
University of Southern California	Los Angeles	1949	174	161
Total Private Not-for-profit MD-granting Schools			475	477
Private For-profit				
California Northstate University	Elk Grove	2015	79	98
Total MD-granting Medical Schools			1,271	1,334
DO-granting Medical Schools (Osteopathic)				
Private Not-for-profit				
Touro University	Vallejo	1997	130	135
Western University of Health Sciences	Pomona	1978	324	226**
Private For-profit				

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Medical School	City	Initial Year of Accreditation	Number of Graduates, 2021-2022	Number of Graduates, 2022-2023
California Health Sciences University	Clovis	2020	----	----
Total – DO-granting Medical Schools			454	361
Total – All Medical Schools			1,725	1,695

* Program was accredited prior to the founding of the Liaison Committee on Medical Education (LCME) in 1942.

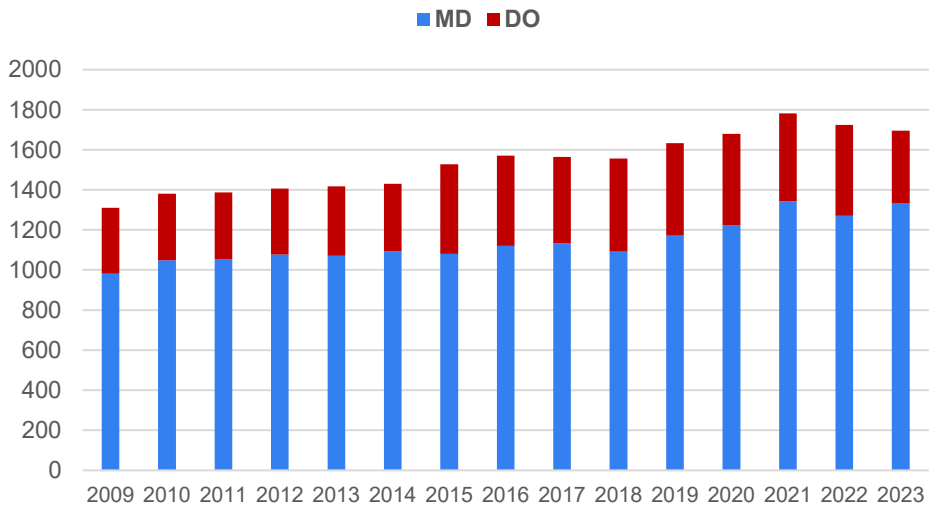
** Prior to the academic year 2022-23, graduates of Western University of Health Sciences College of Osteopathic Medicine of the Pacific (WesternU/COMP) – Northwest, which is located in Oregon, were included with its parent campus WesternU/COMP, located in Pomona, California. As a consequence, the number of graduates of WesternU/COMP's California campus has been overstated since WesternU/COMP – Northwest graduated its first class in 2015.

Sources: American Association of Colleges of Osteopathic Medicine (AACOM), Osteopathic Medical College Graduates by Gender 2000-2023. American Osteopathic Association Commission on Osteopathic College Accreditation (AOA COCA), Colleges of Osteopathic Medicine Directory. Association of American Medical Colleges (AAMC), FACTS: Enrollment, Graduates, and MD-PhD Data. Table B-2.2: Total Graduates by U.S. MD-Granting Medical School and Gender, 2018-2019 through 2022-2023. Liaison Committee on Medical Education (LCME), Accredited MD Programs in the United States.

Trends in Numbers of Graduates of California Medical Schools

As Figure 1 illustrates, the number of graduates of California medical schools increased by 29 percent between 2009 and 2023. This was due to the opening of three new MD-granting medical schools (California Northstate University, California University of Science and Medicine, and the University of California, Riverside), and increases in enrollment at some MD- and DO-granting medical schools. Overall, the number of graduates of MD-granting schools increased by 36 percent and the number of graduates of DO-granting schools increased by 10 percent between 2009 and 2023.

Figure 1. Graduates of California Medical Schools (MDs and DOs), 2009 to 2023



Sources: AACOM, Osteopathic Medical College Graduates by Gender 2000-2023. AAMC, FACTS: Enrollment, Graduates, and MD-PhD Data - Table B-2.2: Total Graduates by U.S. MD-Granting Medical School and Gender,

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2009 through 2013. AAMC, FACTS: Enrollment, Graduates, and MD-PhD Data - Table B-2.2: Total Graduates by U.S. MD-Granting Medical School and Gender, 2013-2014 through 2016-2017. AAMC, FACTS: Enrollment, Graduates, and MD-PhD Data - Table B-2.2: Total Graduates by U.S. MD-Granting Medical School and Gender, 2017-2018 through 2021-2022. AAMC, FACTS: Enrollment, Graduates, and MD-PhD Data - Table B-2.2: Total Graduates by U.S. MD-Granting Medical School and Gender, 2020-2021 through 2022-2023.

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Across the 11 MD-granting schools that had graduates in 2023, the total number of graduates *increased* by five percent between 2022 and 2023. However, there was substantial variation in graduation trends across the 11 MD-granting schools. The number of graduates increased at six MD-granting schools and decreased at five MD-granting schools. The University of California, San Francisco had the largest increase in graduates (+39) and the University of California, Davis had the largest decrease in graduates (-20).[2]

The number of graduates of California medical schools is expected to increase over the next several years as the three newest medical schools in the state begin to graduate their first classes. In 2024, the California Health Sciences University (CHSU) graduated its first class of 66 students CHSU, 2024) and the Kaiser Permanente Bernard J. Tyson School of Medicine graduated its first class of 37 students (AAMC 2024b). The Charles R. Drew University of Medicine and Science (CDU), a Historically Black College and University and a Hispanic-Serving Institution, received preliminary accreditation from the Liaison Committee on Medical Education (LCME), the organization that accredits MD-granting medical schools, in 2022 and enrolled its inaugural class of 61 students in July 2023 (AAMC 2024a).[3] The members of CDU's inaugural class will graduate in 2027.

In 2022 and 2023, the LCME website listed the American University of Health Sciences School of Medicine, a private for-profit university located in Signal Hill (Los Angeles County), as an applicant for accreditation as an MD-granting medical school. As of December 2024, this university is no longer on the LCME's list of applicants for accreditation (LCME, 2024b). Since that time, another university, University of Silicon Andhra, has applied for LCME accreditation (LCME, 2024b).

Matriculation of Californians into MD-granting Medical Schools in California

Forty-two percent of Californians who apply to MD-granting medical schools matriculate at an MD-granting medical school in California (AAMC, 2024c). This percentage is lower than the percentage of applicants matriculating at in-state MD-granting schools in the U.S. overall (60 percent).

Retention of Graduates of California Medical Schools

California leads the nation in retention of medical students. Sixty-three percent of physicians who graduate from a California medical school remain in California to practice (AAMC, 2024c).

[2] The decrease in the number of graduates of the University of California, Davis medical school was largely due to an increase in the number of students who deferred enrollment or were admitted to new pathways, such as the Academic Research Careers for Medical Doctors program and the MD-PhD program. Students in these new pathways take longer than the typical four years to complete their MD degrees because they complete additional coursework and research projects.

[3] CDU has trained medical students for many years in partnership with the University of California, Los Angeles (UCLA), with UCLA awarding students' degrees. CDU now provides the full four-year medical school curriculum and will award its own degrees as an independent medical school.

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Graduate Medical Education

Following medical school, physicians are required to complete residency to obtain the required clinical experiences for board certification and gain competency in their chosen specialty so they may safely practice independently. Physicians who wish to become sub-specialists complete additional years of fellowship training after they complete residency (e.g., cardiologists complete a residency in internal medicine followed by a fellowship in cardiology). The Accreditation Council for Graduate Medical Education (ACGME) accredits training programs in approximately 182 specialties and subspecialties (ACGME, n.d.). Specific requirements for obtaining and maintaining accreditation vary across specialties as do requirements for board certification.

Most residency positions in the United States are filled through the National Residency Matching Program (NRMP), often referred to as the "Match". The purpose of the "Match" is to provide a uniform process by which applicants and residency and fellowship programs can select one another. "Matches" are made by using a computerized algorithm that analyzes the rank order lists compiled by applicants and program directors. Physicians completing MD- or DO-granting medical schools in the U.S. are eligible to participate in the "Match" as are graduates of international medical schools (IMGs) who have been certified by the Educational Commission for Foreign Medical Graduates, an organization that reviews and assesses the credentials of IMGs who seek admission to U.S. residency programs. The percentage of available positions filled in the "Match" is an indicator of interest in the specialty among medical school graduates.

Number of Programs

California had 1,225 ACGME-accredited residency and fellowship programs during the 2023-2024 academic year (latest year for which data is available), an increase of 47 programs from 2022-2023. These programs consisted of 521 residency programs that provide physicians with an initial training experience in a specialty following completion of medical school and 704 subspecialty fellowship programs that provide additional training to physicians who wish to subspecialize within their specialty (ACGME, 2024a). Of the 521 residency programs that enroll physicians immediately after medical school, the ACGME considers 491 to be "pipeline programs" because physicians who complete these programs are eligible for board certification in their specialties. Thirty are programs that provide physicians with one or more years of preliminary training prior to entering a residency program in a specialty. Some programs in some specialties, such as dermatology, neurology, and radiology, only admit physicians who have completed preliminary training. Between 2022-2023 and 2023-2024, the number of residency programs that lead to initial board eligibility increased by three percent (12 programs) and the number of subspecialty fellowship programs also increased by four percent (28 programs). The number of preliminary training programs increased by 30 percent (7 programs) (ACGME, 2023, 2024a).

Among specialties in which CalMedForce funds single specialty or combined residency programs, in 2024 California has 26 emergency medicine residency programs, 79 family medicine residency programs, 58 internal medicine residency programs, four internal medicine/pediatrics residency programs[4], 23 obstetrics/gynecology residency programs, and 18 pediatrics residency programs all of which are accredited (ACGME, 2024b). Rates of growth in number of residency programs have varied across these five specialties. Between 2023 and 2024, seven additional residency programs in CalMedForce specialties were added to the ACGME directory of accredited programs: three in family medicine and three in internal medicine. Increases in emergency medicine, family medicine, and internal medicine residency programs were also observed between 2020 and 2022. No new

[4] Internal medicine/pediatrics residency programs are four-year residency programs that prepare physicians for board certification as both internists and pediatricians.

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emergency medicine, internal medicine/pediatrics, obstetrics/gynecology, or pediatrics programs opened between 2023 and 2024.[5,6]

Table 2. Number of California Residency Programs in CalMedForce Specialties, 2020 to 2024

	Emergency Medicine	Family Medicine	Internal Medicine	Internal Medicine/ Pediatrics	Obstetrics/ Gynecology	Pediatrics
2020	**22**	**69**	**44**	**4**	**21**	**16**
2021	**24**	**70**	**49**	**4**	**21**	**17**
2022	**25**	**72**	**52**	**4**	**23**	**17**
2023	**26**	**76**	**55**	**4**	**23**	**17**
2024	**26**	**79**	**58**	**4**	**23**	**18**

Source: ACGME, Program Search.

Number of Residents and Fellows

During the 2023-2024 academic year, a total of 15,270 residents and fellows were enrolled in ACGME-accredited programs in California. Of these residents and fellows, 12,154 (80 percent) were enrolled in residency programs leading to eligibility for initial board certification, 200 (1 percent) were enrolled in other specialty residency programs that provide preliminary training, and 2,916 (19 percent) were enrolled in subspecialty fellowship programs (ACGME, 2023). Between 2022-2023 and 2023-2024, the total number of residents and fellows enrolled in ACGME-accredited programs in California grew by four percent (ACGME, 2023, 2024a).

During the 2023-2024 academic year, 4,746 persons graduated from ACGME-accredited residency and fellowship programs in California, of whom 3,098 (65 percent) graduated from residency programs leading to initial board certification, 172 (4 percent) graduated from other specialty programs that provide preliminary training, and 1,476 (31 percent) graduated from subspecialty fellowship programs. Between 2022-2023 and 2023-2024, the total number of graduates from ACGME-accredited programs in California grew by 1 percent (ACGME, 2023, 2024a).

[5] The ACGME also tracks combined residency programs in emergency medicine/family medicine, emergency medicine/pediatrics, and family medicine/internal medicine but there are none of these types of residency programs in California.

[6] The number of accredited residency programs in CalMedForce specialties exceeds the number of institutions that participate in the National Resident Matching Program (NRMP) because some institutions sponsor multiple programs and because others do not receive accreditation in time to participate in the NRMP. In addition, residency programs sponsored by military medical facilities in California and other states do not participate in the NRMP because they participate in a separate matching program that is open only to residency programs sponsored by military medical facilities and to residents who participate in the military's Health Professions Scholarship Program or are enrolled at the Uniformed Services University of Health Sciences.

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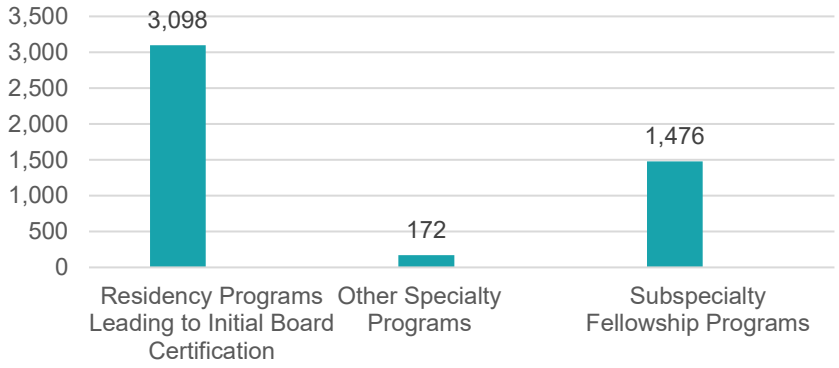
Figure 2. California Residency Program Graduates by Type of Program, 2023-2024



Note: Other specialty programs provide physicians with one or more years of preliminary training prior to entering a residency program in a specialty. Some programs in some specialties, such as dermatology, neurology, and radiology, only admit physicians who have completed preliminary training.

Source: ACGME, Data Resource Book, Academic Year, 2023-2024, Tables D.7 to D.10.

Table 3 lists the number of first-year residents who entered programs leading to initial board certification in CalMedForce specialties in California during the 2023-2024 academic year. The number of first-year residents in these specialties ranged from a low of 20 in internal medicine/pediatrics to a high of 916 in internal medicine. Among other specialties in which CalMedForce funds residency programs, there were 304 first-year emergency medicine residents, 600 first-year family medicine residents, 130 first-year obstetrics/gynecology residents, and 319 first-year pediatrics residents. Between 2022-2023 and 2023-2024, internal medicine had the largest increase in the number of first-year residents (42 residents), followed by family medicine (21 residents), emergency medicine (19 residents), and pediatrics (5 residents). Internal medicine/pediatrics and obstetrics/gynecology had the smallest increases in the number of first-year residents (2 residents).

Table 3. Number of California First-Year Residents in CalMedForce Specialties by Specialty, 2022-2023 and 2023-2024

Specialty	Number of First-Year Residents, 2022-2023	Number of First-Year Residents, 2023-2024	Change in Number, 2022-2023 to 2023-2024	Percentage Change, 2022-2023 to 2023-2024
Emergency Medicine	285	304	19	7%
Family Medicine	579	600	21	4%
Internal Medicine	874	916	42	5%
Internal Medicine/Pediatrics	18	20	2	11%
Obstetrics/Gynecology	128	130	2	2%
Pediatrics	314	319	5	2%
All CalMedForce Specialties	2,198	2,289	91	4%

Source: ACGME, Data Resource Book, Academic Year, 2022-2023, Tables C.30 to C.32. ACGME, Data Resource Book, Academic Year, 2023-2024, Tables C.30 to C.32.

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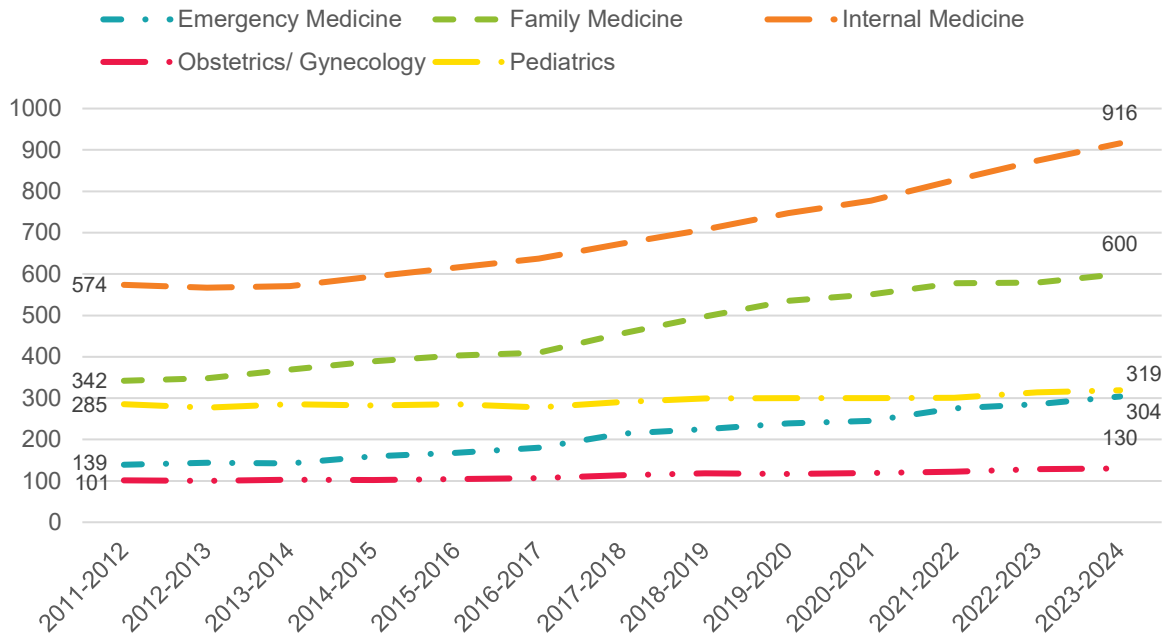
Figure 3 places these short-term changes in the context of long-term trends in the number of first-year residents entering residency programs in the five specialties eligible for CalMedForce grants from the 2011-2012 academic year to the 2023-2024 academic year. The number of first-year residents has increased in all five specialties, but the rate of increase varied substantially across them. This is consistent with the growth in the number of residency programs in these specialties. Internal medicine had the largest increase in the *number* of first-year residents (342) followed by family medicine (258). Emergency medicine had the largest *percentage* increase in the number of first-year residents (119 percent), followed by family medicine (75 percent) and internal medicine (60 percent). In the case of emergency medicine, the high rate of growth in residents was due to a large increase in the number of emergency medicine residency programs in California; between 2011 and 2023, the number of accredited emergency medicine residency programs doubled from 13 to 26 programs. The numbers of first-year residents in obstetrics/gynecology and pediatrics residency programs grew more slowly, rising by 29 percent and 12 percent, respectively.

Figure 3. Number of California First-Year Residents in CalMedForce Specialties, 2011-2012 to 2023-2024



Source: ACGME, Data Resource Book, Academic Years, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023, and 2023-2024.

Percentages of First-Year California Residency Positions in CalMedForce Specialties Filled in the National Residency Matching Program

Table 4 displays the percentages of filled first-year residency positions in specialties that CalMedForce funds for 2021, 2022, 2023, and 2024 (NRMP, 2021, 2022, 2023, 2024). In 2024, match rates for CalMedForce specialties ranged from 96 percent (family medicine, internal medicine, pediatrics) to 100 percent (internal medicine/pediatrics and pediatrics).

Match rates in family medicine, internal medicine, and pediatrics decreased between 2023 and 2024. Pediatrics experienced the largest decrease (four percentage points). Nationwide, the match rate for pediatrics decreased from 97 percent in 2023 to 92 percent in 2024. Most positions in pediatrics were ultimately filled through the Supplemental Offer and Acceptance Program, under which students who did not match can interview for unfilled

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positions and programs can select candidates, but some of these candidates had not originally planned to become pediatricians or were international medical graduates with little clinical experience in the United States (Balch, 2024). The California and nationwide match rates for pediatrics should be monitored in future years to determine whether 2024 was the start of a downward trend.

The match rate for emergency medicine decreased in California and nationwide in 2023 but rebounded in 2024 (NRMP, 2023, 2024). Anecdotal reports suggest this decrease is due to the challenges emergency medicine physicians faced during the COVID-19 pandemic and projections of a surplus of emergency medicine physicians relative to jobs (Meghjani, 2023). Despite the decrease in the match rate for emergency medicine residency programs in California in 2023, the number of residency positions and the number of residents have increased over the past several years due to the establishment of new residency programs. In addition, the new residency programs have begun reaching full capacity by filling all positions in each residency class. (Emergency medicine residency programs are either three or four years long and have three or four classes of residents respectively.)

Table 4. Percentages of California First-Year Residency Positions Filled in the National Residency Matching Program by Specialty, 2021, 2022, 2023, and 2024

Specialty	% First-Year Positions Filled, 2021	% First-Year Positions Filled, 2022	% First-Year Positions Filled, 2023	% First-Year Positions Filled, 2024
Emergency Medicine	99%	97%	92%	98%
Family Medicine	99%	95%	97%	96%
Internal Medicine	98%	96%	99%	96%
Internal Medicine/Pediatrics	100%	100%	100%	100%
Obstetrics/Gynecology	98%	98%	98%	99%
Pediatrics	100%	98%	100%	96%

Source: NRMP, 2021 NRMP Main Residency Match: Match Rates by Specialty and State. NRMP, 2022 NRMP Main Residency Match: Match Rates by Specialty and State. NRMP, 2023 NRMP Main Residency Match: Match Rates by Specialty and State. NRMP, 2024 NRMP Main Residency Match: Match Rates by Specialty and State.

Retention of Graduates of California Residency Programs

California retains a higher percentage of graduate s of its residency programs than the other 49 states and the District of Columbia. Seventy-two percent of physicians who complete residency in California remain in California to practice. Physicians who complete both medical school and residency in California are even more likely to remain in California at 82 percent (AAMC, 2024b).

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Physician Workforce

Data presented in this section of the report were obtained from the Medical Board of California's core license file and responses to a mandatory survey that all allopathic physicians (MDs) are required to complete when they renew their licenses.

Supply of Active Physicians in California

The number of MDs with active California licenses who practice in the state increased by 10 percent between 2020 and 2024, from 123,941 to 135,963 physicians. (See Table 5.)

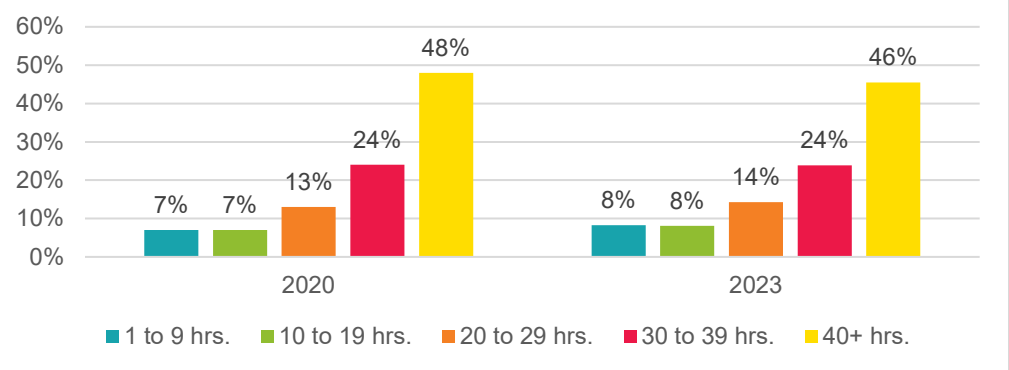
Table 5. Number of Licensed Physicians in California, 2020 and 2023

	2020	2023	% Change
Active California license and practice in California	**123,941**	**135,963**	**10%**
Completed training	**106,729**	**108,329**	**2%**
Answered mandatory survey question about providing patient care	**96,362**	**104,285**	**8%**
Provided patient care at least one hour per week	**88,145**	**94,057**	**7%**
Provided 20 or more hours of patient care per week	**75,468**	**78,704**	**4%**

Source: Survey of Licensees (private tabulation), Medical Board of California, January 2020 and December 2023.

The number of MDs whose responses to the Medical Board's mandatory survey indicate that they have completed residency and provided patient care at least one hour per week also increased, rising by 7 percent, from 88,145 to 94.057 MDs. The number providing patient care 20 or more hours per week increased by 4 percent, from 75,468 to 78,704 MDs. Among physicians who provided patient care in 2023, 84 percent provided care 20 or more hours per week. This is similar to the percentage who provided patient care 20 or more hours per week in 2020. The percentage providing patient care more than 40 hours per week decreased from 48 percent to 46 percent. (See Figure 4.)

Figure 4. California Patient Care Physicians by Hours of Care Provided Per Week, 2020 and 2023



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Source: Survey of Licensees (private tabulation), Medical Board of California, January 2020 and December 2023.

The analyses presented in the remainder of this chapter focus on California MDs who provided patient care at least 20 hours per week (n = 78,704) because these physicians provide most of the medical care delivered in California. These physicians are referred to as "active patient care MDs."

Specialty Distribution of Active Patient Care MDs

Specialist MDs outnumber primary care MDs in California. According to information that MDs reported to the Medical Board, 28 percent of active patient care MDs in California in 2023 were family physicians, general internists or general pediatricians. (See Table 2.) Five percent were obstetrician/gynecologists and six percent were emergency medicine physicians. The distributions of MDs by specialty were similar in 2020 and 2023. (See Appendix A for a complete list of specialties.)

Table 6. Number of Active Patient Care MDs in California by Specialty, 2020 and 2023

	2020	2020	2023	2023
Specialty	**Number**	**Percentage**	**Number**	**Percentage**
Family Medicine	**6,912**	**9%**	**7,109**	**9%**
Internal Medicine	**9,663**	**13%**	**9,796**	**12%**
Pediatrics	**5,432**	**7%**	**5,314**	**7%**
Obstetrics/Gynecology	**3,598**	**5%**	**3,575**	**5%**
Emergency Medicine	**4,405**	**6%**	**4,847**	**6%**
General Practice*	**579**	**1%**	**403**	**1%**
General Surgery	**1,774**	**2%**	**2,233**	**3%**
Psychiatry	**4,666**	**6%**	**4,978**	**6%**
Facility-based Specialties	**10,168**	**13%**	**10,969**	**14%**
Medical Specialties	**17,437**	**23%**	**18,422**	**23%**
Surgical Specialties	**8,932**	**12%**	**9,671**	**12%**
Other Specialties	**1,739**	**2%**	**1,261**	**2%**
Not reported	**163**	**<1%**	**126**	**0.2%**
Total	**75,468**		**78,704**	

*** General practice physicians are physicians who were licensed prior to enactment of the requirement that MDs complete three years of residency training following graduation from medical school. They have completed at least one year of residency training but have not completed a full residency in any specialty.**

Source: Survey of Licensees (private tabulation), Medical Board of California, January 2020 and December 2023. See Appendix A for information about how MDs' specialties were grouped.

Geographic Distribution of Active Patient Care MDs

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Supplies of MDs per population varied widely across California in 2023. Figure 5 displays ratios of primary care and specialist MDs per 100,000 people across ten regions of California. For purposes of this figure, primary care MDs are defined as MDs whose specialties are family medicine, general internal medicine, or general pediatrics. The Greater Bay Area had the highest ratios of both primary care MDs and specialist MDs per 100,000 people. The Inland Empire and the Northern and Sierra regions had the lowest ratios of primary care MDs per 100,000 population and the San Joaquin Valley had the lowest ratio of specialist MDs per 100,000 population. (See Appendix B for a complete list of counties in each region.)

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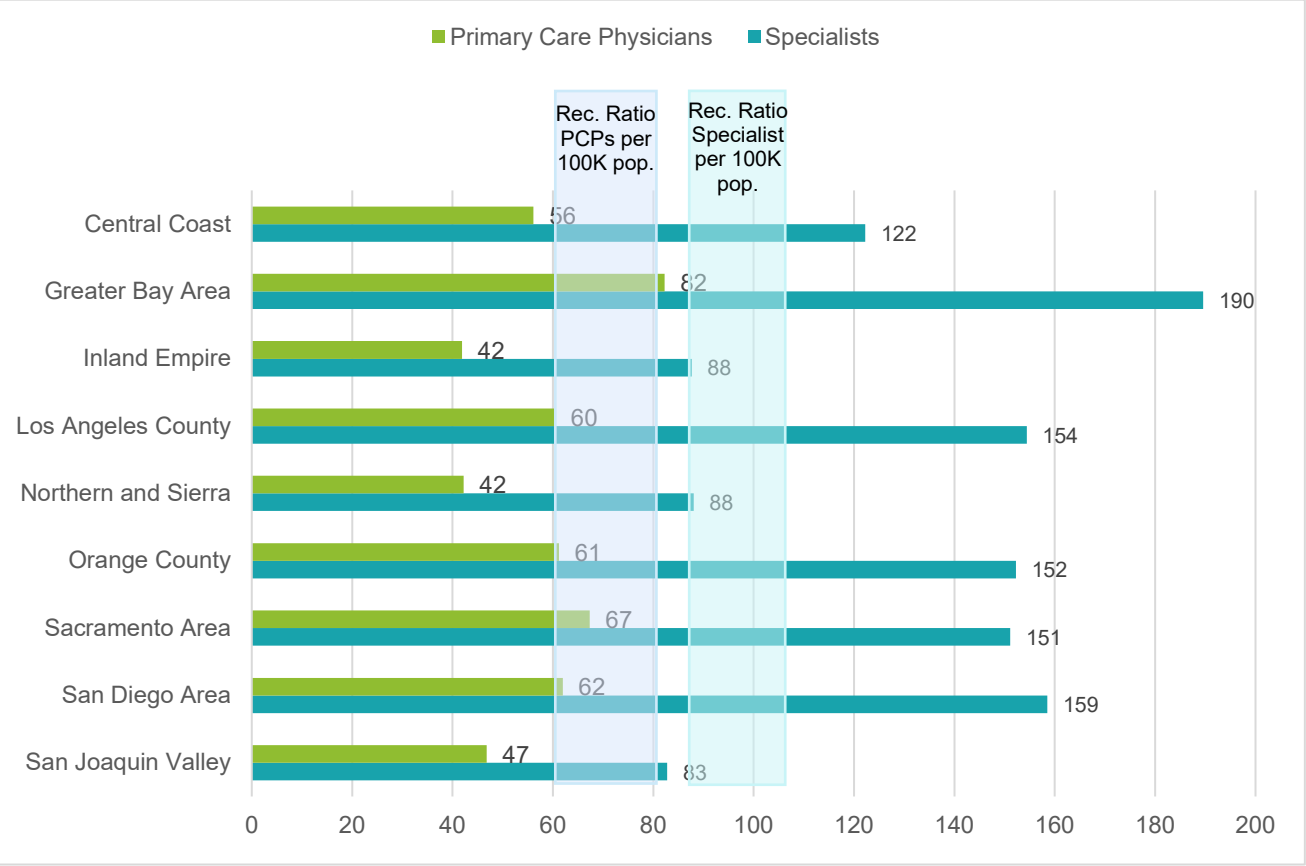
Figure 5. Ratios of Primary Care and Specialist MDs per 100,000 Population by Region, 2023



Note: Primary care MDs are defined as MDs whose primary specialty is family medicine, general practice, internal medicine, or pediatrics.

Sources: Survey of Licensees (private tabulation), Medical Board of California, December 2023, and U.S. Census Bureau, Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for California: April 1, 2020 to July 1, 2022. See Appendix B for information about how MDs' specialties were determined.

A closer look at the five specialties that are eligible for CalMedForce funding indicates that there were important differences in the distribution of MDs in these specialties. In 2023, the Greater Bay Area had the highest ratios of general internists, general pediatricians, and obstetrician/gynecologists per 100,000 people, but had a lower ratio of family physicians per 100,000 population than two other regions of the state. Conversely, the Central Coast had the highest ratios of family physicians per 100,000 people but lower ratios of general internists, general pediatricians, obstetrician/gynecologists, and emergency medicine physicians per 100,000 people than a number of other regions. The Inland Empire had the lowest ratios of family physicians, obstetrician/gynecologists, and emergency medicine physicians per 100,000 people and the Northern and Sierra region had the lowest ratios of general internists and general pediatricians per 100,000 people.

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Table 7. Ratios of Active Patient Care MDs to Population by Region, 2023

	Family Medicine	Internal Medicine	Pediatrics	Obstetrics/ Gynecology	Emergency Medicine
Central Coast	**23**	**19**	**11**	**9**	**12**
Greater Bay Area	**21**	**38**	**20**	**14**	**16**
Inland Empire	**14**	**16**	**9**	**5**	**8**
Los Angeles County	**16**	**26**	**14**	**9**	**12**
Northern and Sierra	**18**	**14**	**7**	**6**	**14**
Orange County	**19**	**23**	**15**	**10**	**11**
Sacramento Area	**22**	**29**	**15**	**10**	**16**
San Diego Area	**19**	**25**	**14**	**9**	**15**
San Joaquin Valley	**17**	**19**	**9**	**7**	**9**

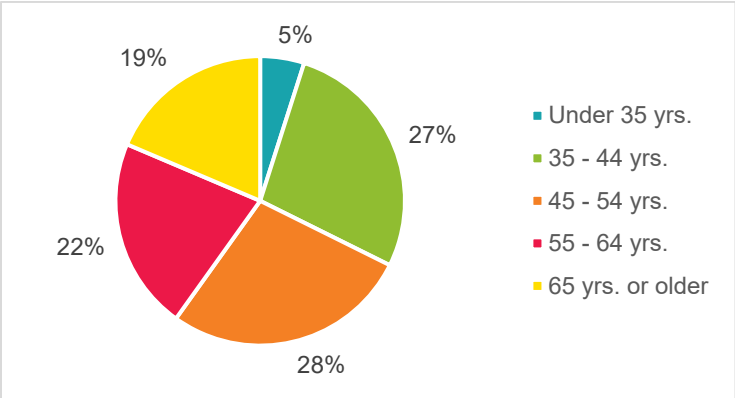
Sources: Survey of Licensees (private tabulation), Medical Board of California, December 2023, and U.S. Census Bureau, Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for California: April 1, 2020 to July 1, 2022.

Demographic Characteristics of Active Patient Care Physicians

Age Distribution

In 2023, nearly one in five active patient care MDs in California was age 65 years or older. An additional 22 percent were age 55 to 64 years. These findings suggest that many MDs providing patient care in California are likely to retire or reduce the number of hours of patient care they provide within the next decade. The age distribution of active patient care physicians in 2023 was similar to the age distribution in 2020.

Figure 6. Age Distribution of Active Patient Care MDs, 2023



Source: Survey of Licensees (private tabulation), Medical Board of California, December 2023.

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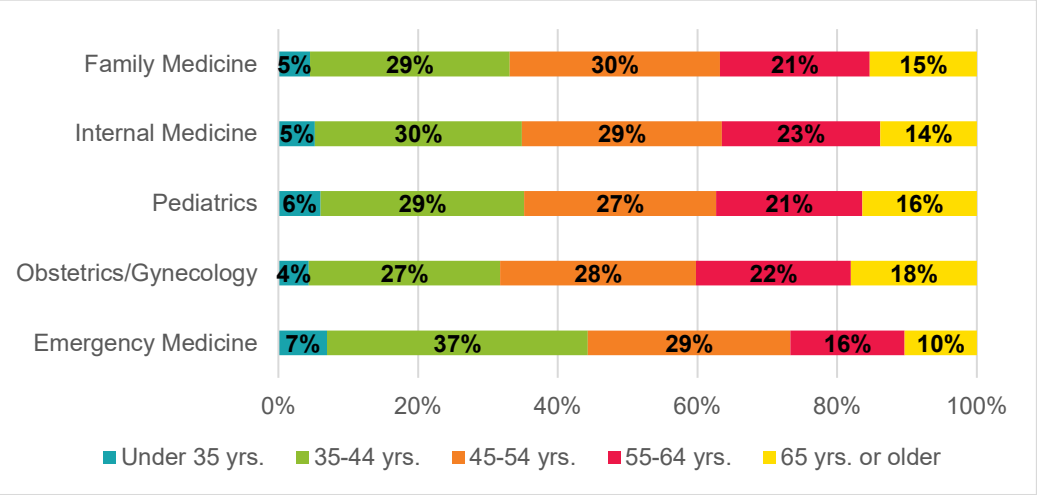
Among the five specialties for which CalMedForce funds residency programs, obstetrics/gynecology had the largest percentage active patient care MDs over age 65 years in 2023 (18 percent). Emergency medicine had the smallest percentage of MDs age 65 years or older (10 percent).

Figure 7. Age Distribution of Active Patient Care MDs in CalMedForce Specialties, 2023



Source: Survey of Licensees (private tabulation), Medical Board of California, December 2023.

The age distribution of physicians in the five specialties for which CalMedForce funds residency programs varies substantially across California's regions. As the data in Table 5 indicate, the Northern and Sierra region has the highest percentage of active patient care family physicians, internists, obstetrician/gynecologists, and emergency medicine physicians that are age 65 years or older. The Central Coast had the second highest percentages of active patient care family physicians and internists age 65 years or older. The Sacramento region had the smallest percentage of active patient care physicians age 65 or older in all CalMedForce specialties except pediatrics.

Table 8. Percentage of Active Patient Care MDs Age 65 Years or Older by Region, 2023

	Family Medicine	Internal Medicine	Pediatrics	Obstetrics/ Gynecology	Emergency Medicine
Central Coast	**22%**	**19%**	**20%**	**24%**	**15%**
Greater Bay Area	**11%**	**10%**	**11%**	**11%**	**7%**
Inland Empire	**15%**	**13%**	**21%**	**16%**	**15%**
Los Angeles County	**16%**	**18%**	**22%**	**23%**	**10%**
Northern and Sierra	**30%**	**23%**	**16%**	**31%**	**21%**
Orange County	**17%**	**16%**	**18%**	**21%**	**14%**
Sacramento Area	**10%**	**9%**	**12%**	**10%**	**5%**
San Diego Area	**12%**	**12%**	**13%**	**17%**	**5%**
San Joaquin Valley	**18%**	**17%**	**18%**	**26%**	**17%**

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Source: Survey of Licensees (private tabulation), Medical Board of California, December 2023.

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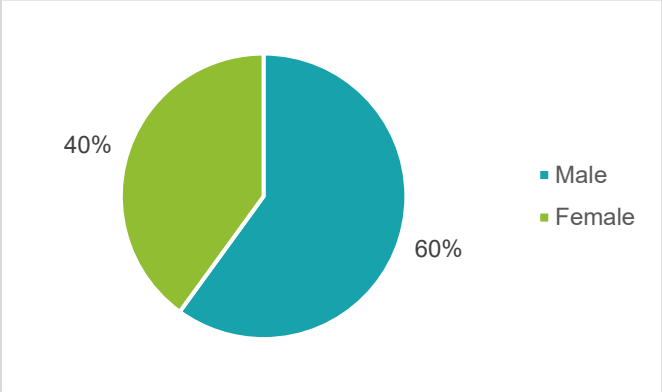
Gender

In 2023, 60 percent of active patient care MDs were male, and 40 percent were female. (See Figure 8.) The Medical Board does not give physicians the option to indicate whether their gender identity is nonbinary.

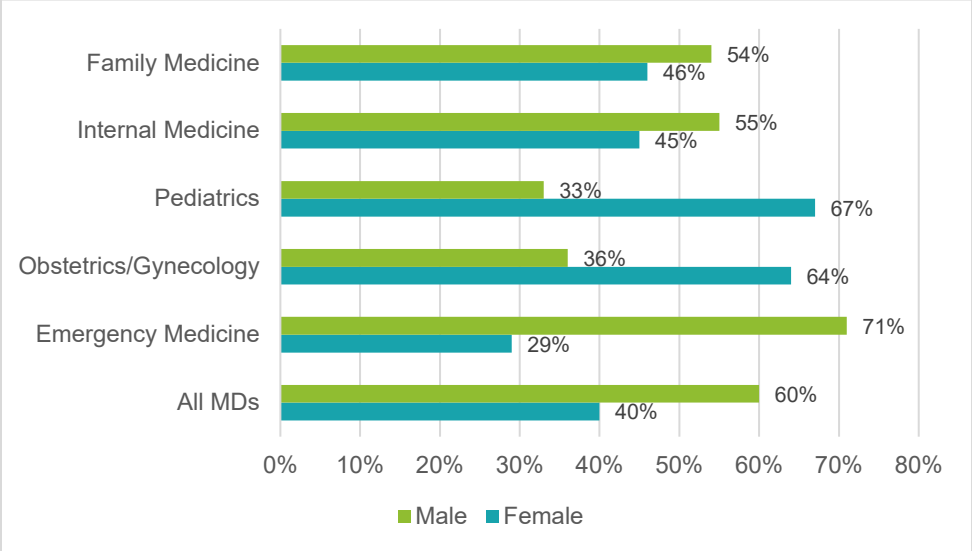
Figure 8. Active Patient Care MDs by Gender, 2023



Source: Survey of Licensees (private tabulation), Medical Board of California, December 2023.

The percentages of males and females differ substantially across the specialties for which CalMedForce funds residency programs. With the exception of emergency medicine, these specialties had higher percentages of female MDs than the percentage of females among all MDs in California (40 percent). Pediatrics had the largest percentage of females (67 percent) followed closely by obstetrics/gynecology (64 percent). Emergency medicine had the smallest percentage of females (29 percent).

Figure 9. Gender of Active Patient Care MDs in CalMedForce Specialties, 2023



Source: Survey of Licensees (private tabulation), Medical Board of California, December 2023.

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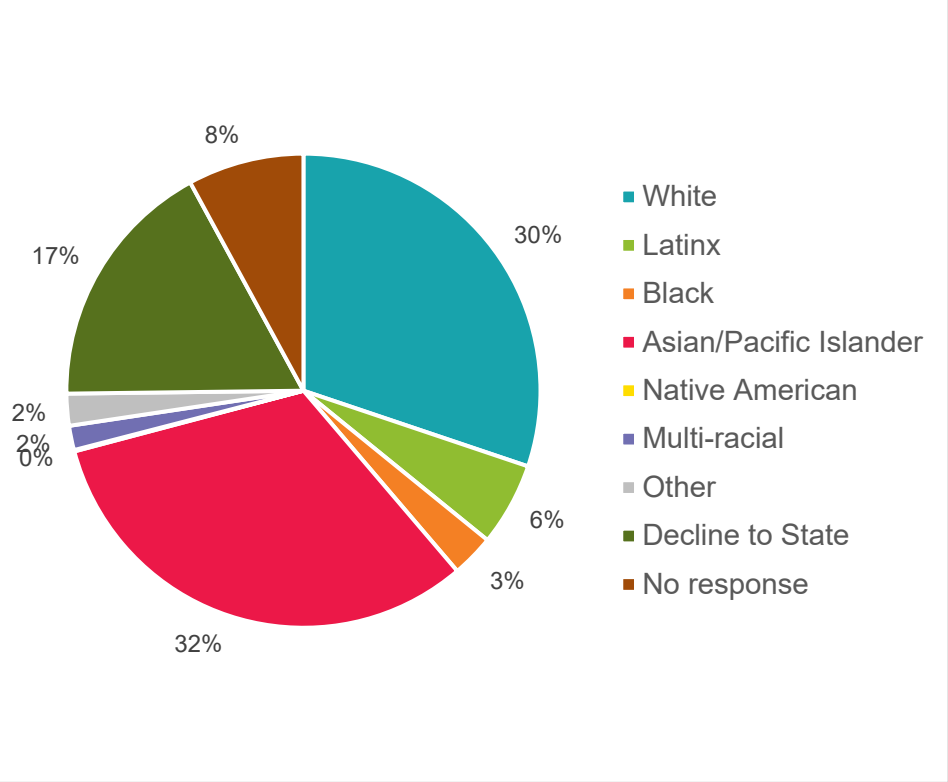
Race/Ethnicity

Assessing the racial/ethnicity diversity of California's physicians is challenging because 25 percent of MDs did not report their race/ethnicity during the 2022-2023 licensure renewal cycle. Data on MDs who reported their race/ethnicity suggest that they do not reflect the racial/ethnic diversity of the state's population. In 2022, 40 percent of Californians are Latinx but in 2023 only 6 percent of MDs were Latinx. Blacks were also underrepresented among MDs, accounting for 3 percent of MDs in comparison to 6 percent of the state's population (U.S. Census Bureau, 2024).

Figure 10. Active Patient Care MDs by Race/Ethnicity, 2023



Source: Survey of Licensees (private tabulation), Medical Board of California, December 2023.

The race/ethnicity of MDs varied substantially across the five specialties in which CalMedForce funds residency programs (See Table 6). With the exception of internal medicine, these specialties had higher percentages of Latinx MDs than the percentages among all California MDs. Obstetrics/gynecology had the highest percentage of Black MDs (6 percent), and family medicine had the highest percentage of Latinx MDs (13 percent). Internal medicine and pediatrics had higher percentages of Asian/Pacific Islanders than the percentage among all California MDs.

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Table 9. Race/Ethnicity of California's Population and Active Patient Care MDs in CalMedForce Specialties, 2023

	California Population	Family Medicine	Internal Medicine	Pediatrics	Obstetrics/ Gynecology	Emergency Medicine
White	**35%**	**26%**	**20%**	**28%**	**37%**	**39%**
Latinx	**40%**	**13%**	**5%**	**8%**	**8%**	**7%**
Black	**6%**	**4%**	**3%**	**4%**	**6%**	**3%**
Asian/Pacific Islander	**16%**	**32%**	**44%**	**36%**	**26%**	**19%**
Native American/Alaska Native/Native Hawaiian	**0.4%**	**0.1%**	**0.1%**	**0.1%**	**0.2%**	**0.2%**
Other	**Not reported**	**2%**	**3%**	**2%**	**2%**	**2%**
Two or more race/ethnicities	**3%**	**2%**	**1%**	**2%**	**3%**	**2%**
Declined to state	**Not applicable**	**15%**	**16%**	**14%**	**13%**	**20%**
No response	**Not applicable**	**7%**	**8%**	**6%**	**7%**	**8%**

Source: U.S. Census Bureau, Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for California: April 1, 2020 to July 1, 2022; Survey of Licensees (private tabulation), Medical Board of California, December 2023.

Languages Spoken

According to the American Community Survey, an ongoing survey that the U.S. Census Bureau administers, 44 percent of Californians age 5 years or older speak a language other than English at home, and 17 percent (6.4 million people) speak English less than very well (Migration Policy Institute, 2024). The five most frequently spoken of these languages in California other than English are Spanish, Chinese (including Cantonese and Mandarin), Vietnamese, Tagalog, and Korean (Migration Policy Institute, 2024). Figure 8 displays the percentages of California MDs and California's population who speak a language other than English. Aside from English, Spanish was the most frequently spoken language among both MDs (26 percent) and the population (28 percent). Twenty-two percent of MDs speak a language other than the five most frequently spoken non-English languages in California versus 8 percent of the state's population.

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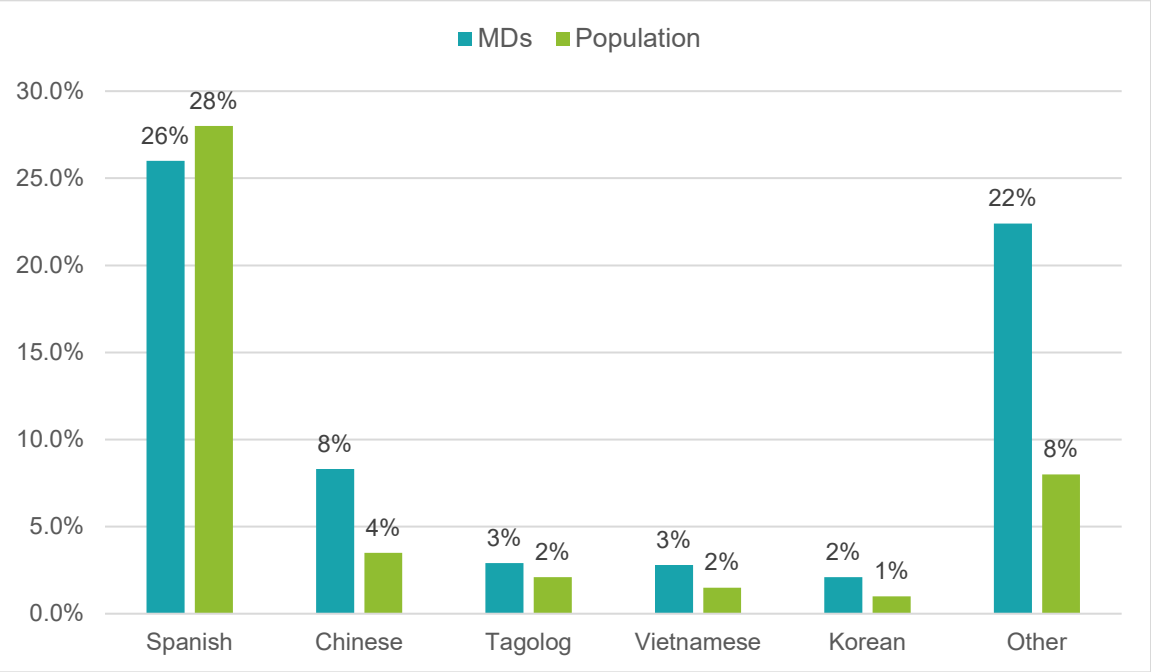
Figure 11. Percentage of Active Patient Care MDs and Population Speaking Languages Other than English, 2023



Source: Migration Policy Institute tabulations of the U.S. Census Bureau's American Community Survey (ACS) and Decennial Census. Survey of Licensees (private tabulation), Medical Board of California, December 2023.

The languages spoken by MDs in the five specialties in which CalMedForce funds residency programs varied. Most notably, the percentage of MDs who reported that they speak Spanish ranged from 15 percent of internists to 31 percent of obstetrician/gynecologists and pediatricians. Family physicians, internists and pediatricians were substantially more likely to speak Tagalog than obstetrician/gynecologists and emergency medicine physicians.

Table 10. Languages Spoken by Active Patient Care MDs in CalMedForce Specialties, 2023

	Family Medicine	Internal Medicine	Pediatrics	Obstetrics/ Gynecology	Emergency Medicine
Spanish	**30%**	**15%**	**31%**	**31%**	**29%**
Chinese (including Cantonese and Mandarin)	**3%**	**4%**	**3%**	**3%**	**2%**
Vietnamese	**3%**	**4%**	**2%**	**2%**	**1%**
Tagalog	**4%**	**3%**	**5%**	**1%**	**1%**
Korean	**1%**	**2%**	**2%**	**2%**	**1%**
Other	**17%**	**24%**	**16%**	**13%**	**10%**

Source: Survey of Licensees (private tabulation), Medical Board of California, December 2023.

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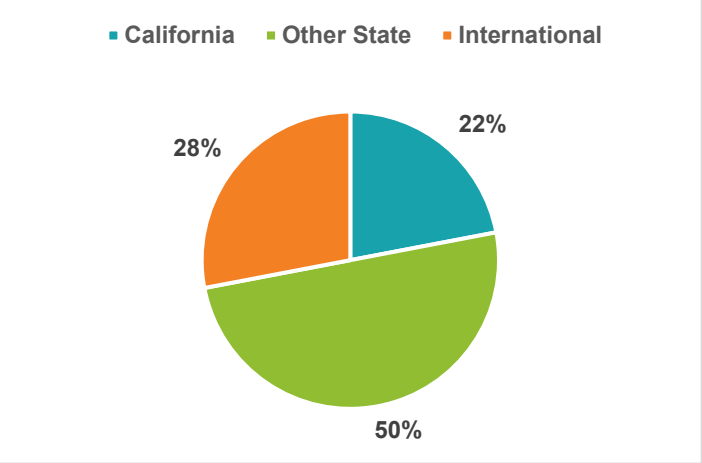
Medical School Location

Historically, California has imported a large share of its MDs from other states and nations. Some of these MDs complete residency in California and remain in the state to practice. Others move to California after completing both medical school and residency. In addition, a large percentage of Californians who become physicians complete medical school in other states and then return to California for residency or to practice. In 2023, 22% of active patient care MDs in California graduated from a California medical school. Graduates of medical schools in other states accounted for the largest share of active patient care physicians (50%). The remainder graduated from international medical schools. These international medical graduates include both immigrants from other nations and U.S. citizens and permanent residents who completed medical school abroad.

Figure 12. California Active Patient Care MDs by Medical School Location, 2023



Source: Medical Board of California, Core License File, December 2023; private tabulation.

The distribution of MDs across the three types of medical school locations varied widely across active patient care physicians in the five specialties in which CalMedForce funds residency programs. A much smaller percentage of internists graduated from a California medical school (17 percent) than the percentages of MDs in the other four specialties (25 percent to 29 percent). The percentage of international medical graduates ranged from a low of 9 percent of obstetrician/gynecologists to a high of 45 percent of internists.

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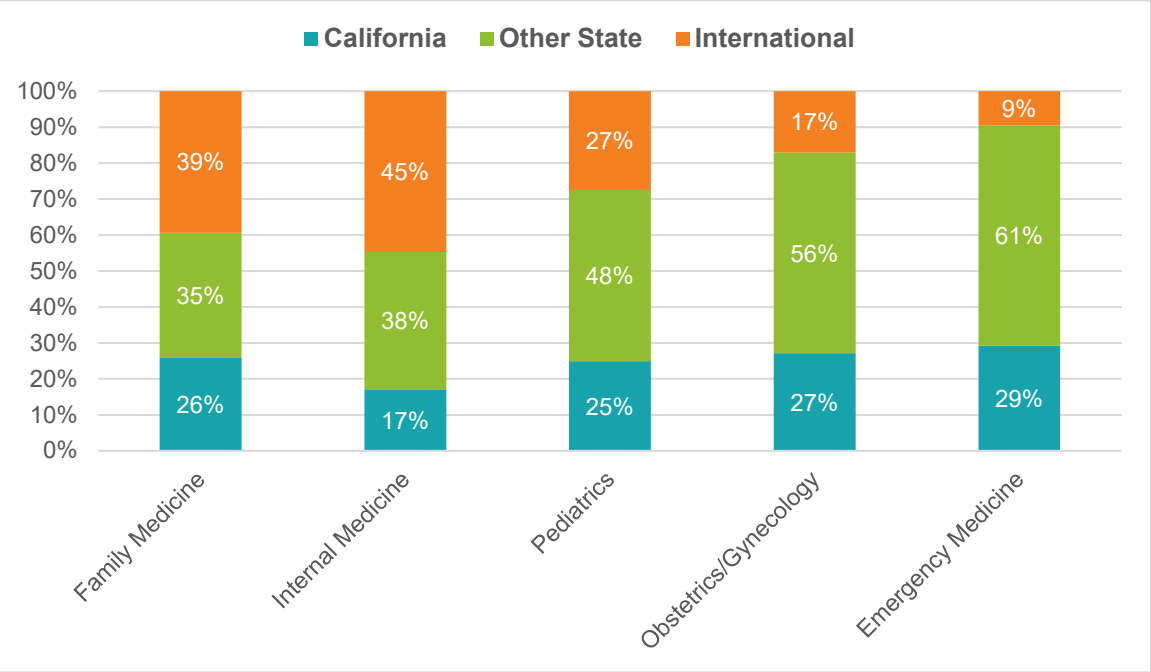
Figure 13. Active Patient Care MDs in CalMedForce Specialties by Medical School Location, 2023



Source: Survey of Licensees (private tabulation), Medical Board of California, December 2023.

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Conclusion

The findings of this report illustrate the importance of monitoring trends in medical education in California. These trends provide evidence of California's progress toward increasing the numbers of medical students and residents educated in the state as well as evidence of the physician workforce challenges the state continues to face.

Medical School

Long-term trends indicate a substantial increase in medical school graduates. The number of graduates of California medical schools has increased by 29 percent since 2009 due to the opening of new medical schools and increases in class size. This trend will continue over the next several years. Two new medical schools graduated their first classes in 2024, and a third new medical school will graduate its first class in 2027.

Graduate Medical Education

The number of residents completing residency in California is increasing in all specialties due to growth in the number of residency programs, but rates of growth vary substantially across the five specialties in which CalMedForce funds residency programs. Between the 2011-2012 and 2023-2024 academic years, internal medicine residency programs experienced the largest increase in the *number* of first-year residents and emergency medicine experienced the largest *percentage* increase in first-year residents. Pediatrics experienced the smallest percentage increase in first-year residents and the match rate in pediatrics decreased in California and the nation between 2023 and 2024. The match rate in emergency medicine decreased between 2022 and 2023 but rebounded in 2024.This variation in growth suggests that California's policymakers and medical educators should continue monitoring trends in graduate medical education in the specialties CalMedForce funds, especially emergency medicine and pediatrics, due to decreases in their match rates in recent years.

Physician Workforce

California's physician workforce has grown slowly over the past four years. The number of MDs who provide patient care 20 or more hours per week has increased by only four percent between 2020 and 2023. The state's MDs consists predominantly of specialists; only 28 percent of MDs are family physicians, general internists, or general pediatricians. California's MDs are also poorly distributed across the state. The Greater Bay Area has twice as many primary care physicians per capita as the Inland Empire and Northern and Sierra regions and more than twice as many specialists per capita as the San Joaquin Valley. Policymakers should continue to pursue strategies to increase the number of physicians practicing in under-resourced areas. Strategies should include opening new residency programs or tracks in underserved areas, taking residency programs' track records of placing graduates in underserved areas into account when awarding funding, and providing loan repayment to physicians in exchange for practicing in an underserved area. Training residents in underserved parts of the state is especially important because physicians tend to practice in close proximity to the communities in which they completed residency (Fagan et al., 2015).

California's MDs are also aging, and some are contemplating early retirement. Statewide, one in five physicians who provide patient care 20 or more hours per week is age 65 years. In some regions and specialties, the percentage age 65 or older is even larger. Nearly one third of family physicians and obstetrician/gynecologists in the Northern and Sierra region are age 65 or older. In addition, multiple studies have found that physicians are considering retirement earlier than they originally planned or reduce their work hours due to burnout and moral injury (Linzer et al., 2022; Shanafelt et al., 2023). Policymakers should consider prioritizing funding for residency programs in areas of the state with high concentrations of older physicians to ensure that younger physicians are available to replace them when they retire. They should also monitor retirement rates and reductions in work hours among physicians under age 65.

The MD workforce also does not reflect the racial/ethnic and linguistic diversity of California's population. Latinx and Blacks are underrepresented among MDs relative to their shares of the state's population. Although

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California's MDs speak many languages other than English, including those most frequently spoken in California, available data do not indicate how well the distribution of these MDs aligns with the distribution of Californians who do not speak English well. Because literature suggests that racial/ethnic and linguistic concordance improves patients' trust in their physicians and their willingness to follow treatment recommendations (Daggett, et al., 2023; Schenker et al. 2010; Traylor et al., 2010), policymakers should support efforts to increase the numbers of medical students and residents from underrepresented backgrounds and increase the numbers of MDs who can converse fluently with patients with limited English proficiency.

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Appendix A. Specialties of California MDs

Family Medicine

Internal Medicine

Pediatrics

Obstetrics and Gynecology

Emergency Medicine

General Practice

General Surgery

Psychiatry

Psychiatry
Psychosomatic Medicine

Facility-Based Specialties
Anesthesiology
Nuclear Medicine
Pathology
Physical Medicine and Rehabilitation
Radiation Oncology
Radiologic Physics
Radiology

Other Specialties
Aerospace Medicine
Complementary and Alternative Medicine
Pain Medicine
Public Health & General Preventive Medicine
Other Specialty

Medical Specialties

Allergy & Immunology
Cardiology
Critical Care
Dermatology
Endocrinology
Epilepsy
Gastroenterology
Geriatrics
Hematology
Hospice and Palliative Medicine
Infectious Disease
Medical Genetics
Neonatal-Perinatal Medicine
Nephrology
Neurodevelopmental Disabilities
Neurology
Neurology with Special Quals in Child Neurology
Occupational Medicine
Oncology
Pulmonology
Rheumatology
Sleep Medicine

Surgical Specialties
Colon and Rectal Surgery
Cosmetic Surgery
Facial/Plastic/Reconstructive Surgery
Neurological Surgery
Ophthalmology
Orthopedic Surgery
Otolaryngology
Pediatric Surgery
Plastic Surgery
Spine Surgery
Sports Medicine
Surgery of the Hand
Surgical Critical Care
Surgical Oncology
Thoracic Surgery
Urology
Vascular Surgery

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Appendix B. California Counties Included in Regions

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

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