



# Graduate Medical Education (GME) Expansion in California

## A Progress Update: 2013–2023

OCTOBER 2024



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## About the Authors

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## Acknowledgments

The authors wish to acknowledge Kathryn Phillips, MPH, associate director of improving access at the California Health Care Foundation, for her guidance and contributions, and the following individuals for their valuable insight and support in creating this report: Deena McRae, MD, associate vice president of academic health sciences in the UC Office of the President; Janet Coffman, PhD, MPP, MA, professor at the Institute for Health Policy Studies at the UCSF School of Medicine; Lupe Alonzo Diaz, MA, president and CEO of Physicians for a Healthy California; and Hovik Khosrovian, senior policy advisor for health workforce development at the California Department of Health Care Access and Information.

## About the Foundation

The [California Health Care Foundation](https://www.chcf.org) is an independent, nonprofit philanthropy that works to improve the health care system so that all Californians have the care they need. We focus especially on making sure the system works for Californians with low incomes and for communities who have traditionally faced the greatest barriers to care. We partner with leaders across the health care safety net to ensure they have the data and resources to make care more just and to drive improvement in a complex system.

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# Executive Summary

Graduate Medical Education (GME), also called medical residency, is the final step in training required for a physician to receive a license to practice medicine in California.\* A well-developed network of high-quality GME programs in California is necessary to develop a robust supply of physicians who will stay and practice in the state.<sup>1</sup> In 2019, the California Future Health Workforce Commission prioritized expanding primary care and psychiatry residencies across the state to address physician shortages. This report provides an overview of

GME expansion for the period 2013–2023, discussing both the launch of new residency programs and the expansion of the number of positions within established programs. It examines GME for all specialties; GME for priority specialties, including family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and emergency medicine; and GME for primary care and psychiatry. Finally, this report focuses on changes in residency programs and positions. An accompanying explainer on GME financing provides important additional detail on the federal, state, and philanthropic investments that supported this growth.

## KEY TAKEAWAYS

- ▶ Over the past decade, the number of California residency programs has steadily increased, indicating the launch of new residencies across the state.
- ▶ Over the past five years, the increase in number of residency positions offered has been especially pronounced, indicating that existing residency programs have also expanded during that period.
- ▶ Although not all the medical specialties prioritized by the state for expansion (i.e., emergency medicine, family medicine, internal medicine, obstetrics and gynecology, pediatrics, and psychiatry) have experienced a net increase in numbers of residency programs, the number of residency positions offered in each of these specialties over the past five years has increased.
- ▶ Over the past five years, almost two-thirds of the new residency programs established and 75% of the new positions added have been in priority specialties.
- ▶ California's ranking among US states in residents and fellows per 100,000 individuals improved between 2014 and 2020, from 31st to 26th position. California's ranking in primary care residents and fellows per 100,000 individuals worsened over this time period, from 33rd to 36th position. The reasons for these changes relative to other states are unclear.
- ▶ Specific regions, such as the San Joaquin Valley, the Inland Empire, and the rural north, suffer from long-standing physician shortages. Although there has been some growth in priority residencies in these regions, deeper analysis is needed to assess progress on the geographic distribution of GME programs across the state.
- ▶ California has made progress on GME expansion but is far from meeting the primary care and psychiatry GME expansion goals set by the California Future Health Workforce Commission in 2019. Between 2018 and 2023, California added 60.1% of the new primary care GME positions and 10.5% of the new psychiatry GME positions recommended by the Commission for that period.

\* Some physicians decide to subspecialize, pursuing additional training called a fellowship. This report focuses primarily on residency training, the minimum requirement to become licensed in California.

# Introduction

In 2019, the California Future Health Workforce Commission (the Commission) published 27 recommendations on strategies to meet the demand for health care in the state over the next decade.<sup>2</sup> These wide-ranging strategies compelled state officials and policymakers to provide funding toward and attention to these specific recommendations. One of the top ten priority recommendations was to expand access to graduate medical education (GME) in primary care (family medicine, internal medicine, obstetrics and gynecology, and pediatrics) and psychiatry by both establishing new programs and expanding existing programs statewide. Even before the Commission released its recommendations statement, state funding for primary care GME increased dramatically through the expansion of the Song-Brown program and the launch of CalMedForce (see Appendix A).<sup>3</sup>

## Definitions: Residency/GME, Programs, and Positions

Physicians graduate from medical school with a Doctor of Medicine (MD) or Doctor of Osteopathy (DO) degree but are not prepared to enter directly into clinical practice. **Residency or Graduate Medical Education (GME)** is the next step in a physician’s training and is required for CA state licensure. During residency training, physicians are supervised members of the clinical workforce who deliver patient care in an apprenticeship model and become increasingly independent over time. Residency training typically takes from three to five years and is conducted in specialized **programs** (e.g., anesthesia, dermatology, family medicine, internal medicine, pediatrics, general surgery, etc.). Following residency, some physicians will complete an additional one to five years of subspecialty **fellowship** training. Individual training programs vary in size and number of **positions** available to residents or fellows.

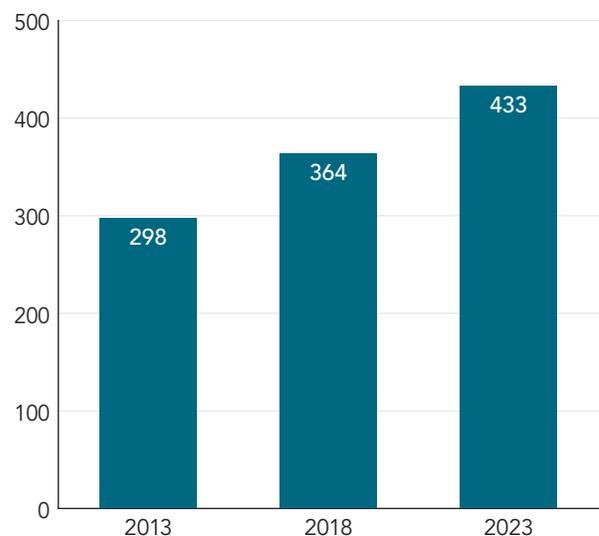
Source: “Physicians and Surgeons,” Medical Board of California, accessed September 26, 2024.

After five years of focused effort and financial investment, the California Health Care Foundation has requested a mid-course review of GME expansion across the state.

# Growth of GME Programs and Positions in California, 2013–2023

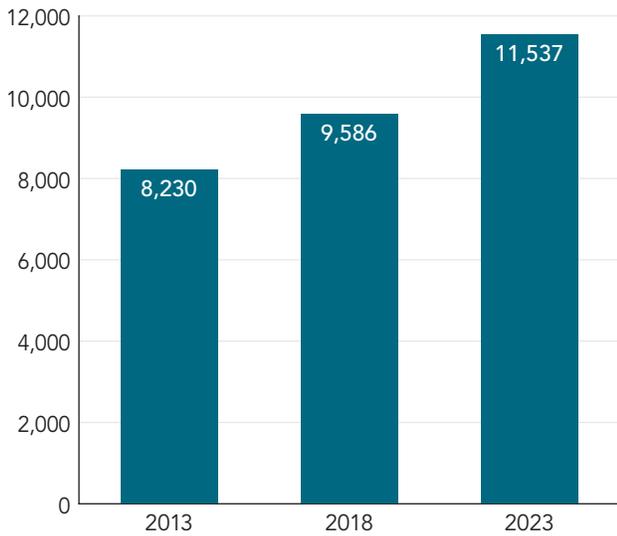
The total number of residency programs in California has steadily increased over the past decade (2013–2023) at roughly the same rate in the first half of the decade as in the second (Figure 1). These numbers represent net program gain, although some programs closed while new ones opened. The number of residency positions offered has increased more rapidly over the past five years (Figure 2). This indicates successful expansion not only in the number of new residency programs, but also in the size of existing programs.

Figure 1. Number of California Residency Programs, 2013–2023



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

**Figure 2. Number of California Residency Positions, 2013–2023**



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

Between 2014 and 2020, California’s ranking among US states in residents and fellows per 100,000 individuals improved from 31st to 26th position. California’s ranking in primary care residents and fellows per 100,000 individuals worsened over this period. Reasons for these changes relative to other states are unclear.

**Table 1. California’s Ranking Among US States in Residents and Fellows per 100,000 People**

YEAR	2014	2016	2018	2020
Total residents and fellows in training per 100,000 people	31st	31st	29th	26th
Total primary care residents and fellows in training per 100,000 people	33rd	33rd	37th	36th

Sources: *State Physician Workforce Data Reports*, Association of American Medical Colleges (AAMC), 2015, 2017, 2018, 2020.

## Growth in California Residencies, by Priority Specialty

Between 2013 and 2023, the number of California residency programs increased in most priority specialties, with the exception of pediatrics and combined internal medicine/pediatrics (Figure 3).

### Definitions: Priority Specialties

The State of California has identified several medical specialties as high priorities for expansion. Programs within these specialties are eligible for state funding and are noted in this report as “**priority specialties**.” The California Department of Health Care Access and Information (HCAI) provides funding for GME expansion in **family medicine, internal medicine, obstetrics and gynecology, pediatrics, and psychiatry**. CalMedForce grants, administered by Physicians for a Healthy California and funded through California Proposition 56, can be awarded for GME expansion in **family medicine, internal medicine, obstetrics and gynecology, pediatrics and emergency medicine**.

Sources: “*CalMedForce*,” Physicians for a Health California, accessed September 27, 2024; “*Grants for Organizations*,” California Department of Health Care Access and Information, accessed October 14, 2024.

## Teaching Health Center GME Program (THCGME)

The Teaching Health Center GME Program was established by the 2010 Patient Protection and Affordable Care Act. Because of the Centers for Medicare & Medicaid Services' (CMS) emphasis on hospital-based GME financial subsidies, the vast majority of GME — including primary care — occurs in teaching hospitals. The purpose of THCGME is to provide payments to outpatient Teaching Health Centers to subsidize the training of primary care medical (including family medicine, internal medicine, psychiatry, pediatrics, obstetrics and gynecology, and geriatrics) and dental residents. There are currently eight Teaching Health Centers in California designated by the Health Resources and Services Administration (HRSA).

Sources: “Teaching Health Center Graduate Medical Education (THCGME): Expanding the Primary Care Workforce,” Health Resources and Services Administration, last reviewed July 2024; [Medicare Graduate Medical Education Payments: An Overview](#) (PDF), Congressional Research Service, last updated September 29, 2022; “Teaching Health Center Graduate Medical Education (THCGME) Academic Year 2023-2024 Awardees,” Health Resources and Services Administration (HRSA), last reviewed July 2023.

Priority specialties have witnessed the following GME changes:

- ▶ **Emergency medicine.** This specialty had not previously been eligible for state funding, but with the passage of California Proposition 56, it became eligible for CalMedForce grants.<sup>4</sup> Although there was some growth from 2013–2018, there was more growth from 2018–2023. This corresponds with the timing of the launch of CalMedForce, which began awarding grants in fiscal year 2018–2019.
- ▶ **Family medicine.** The growth of family medicine residencies slowed slightly over the past five years compared to the previous five-year period. The Teaching Health Center GME Program (THCGME) began in 2010 and provided new federal funding to launch residency programs

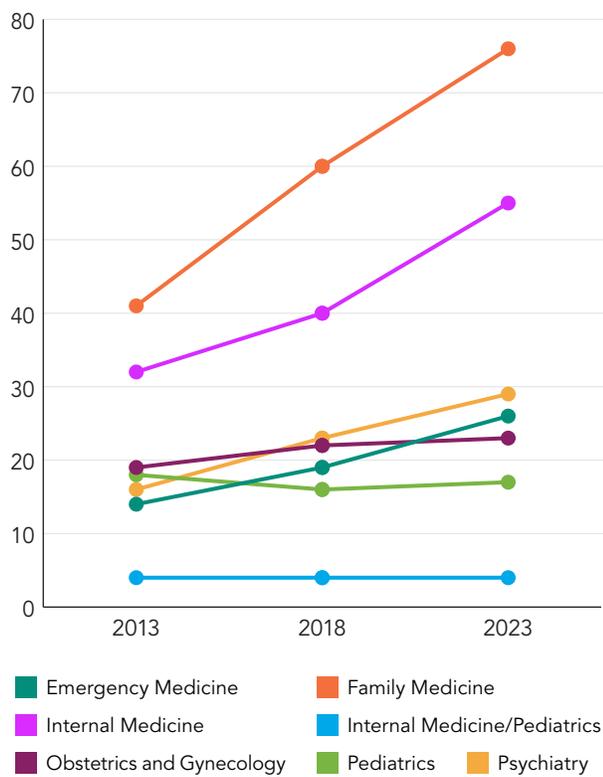
in community health centers, which may have contributed to the relatively rapid increase in programs from 2013–2018. Establishing new residencies has continued in recent years, although at a slightly slower pace.

- ▶ **Internal medicine.** Internal medicine residencies had the largest rate of increase over the last five years. One factor that may have contributed to this is that the CalMedForce program reserves a fixed proportion of funding each year for internal medicine GME expansion and does not require those programs to compete with other priority specialties for funding. Anecdotally, launching a new internal medicine residency is considered more straightforward than it is to launch programs in other primary care specialties, like family medicine or pediatrics.
- ▶ **Combined internal medicine/pediatrics.** There are only four combined internal medicine/pediatrics programs in California, all of which were established in 2006. Despite being eligible for state funding, no additional programs have been added.
- ▶ **Obstetrics and gynecology.** There has been some growth, although it has been minimal. Despite being eligible for both Song-Brown and CalMedForce funding, only two new programs opened, and one closed, resulting in a net gain of one new program.
- ▶ **Pediatrics.** Although one new program opened between 2013 and 2018, three other programs closed, resulting in a net loss of two programs. One new program began between 2018 and 2023.
- ▶ **Psychiatry.** The number of psychiatry residencies increased at a steady rate over the past ten years. Psychiatry is not currently funded by Song Brown or CalMedForce, so the large state investments in these programs in recent years would not be expected to impact psychiatry residency

expansion.\* That said, since 2020, HCAI has granted relatively small amounts of intermittent funding to psychiatry GME expansion through the Psychiatric Education Capacity Expansion (PECE) Program using funds from Workforce for a Healthy California, the Children and Youth Behavioral Health Initiative (CYBHI), and the Workforce Education and Training (WET) program.<sup>5</sup>

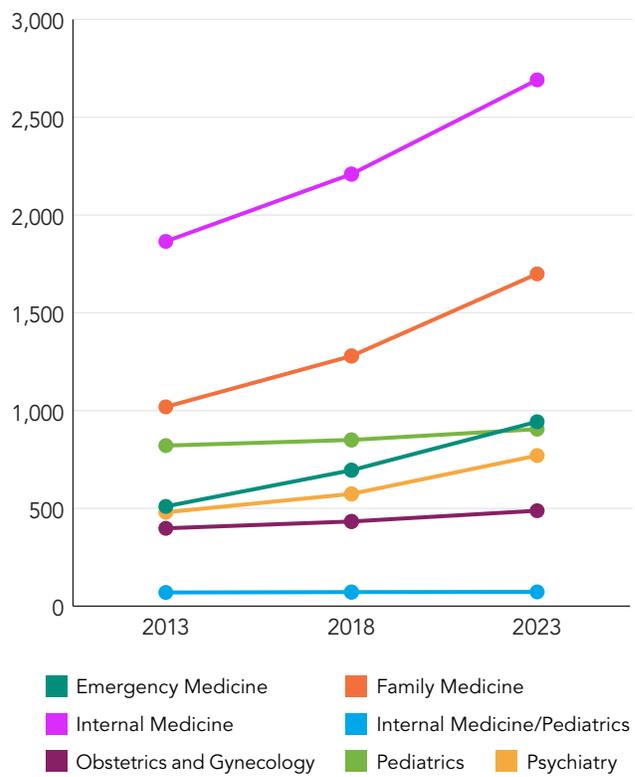
All priority specialties increased their numbers of available GME positions from 2013–2023 (Figure 4). Additionally, all specialties have added more positions in the last five years than would be accounted for by the addition of new programs, indicating that all priority specialties have expanded existing programs.

**Figure 3. Number of California Residency Programs in Priority Specialties, 2013–2023**



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

**Figure 4. Number of California Residency Positions in Priority Specialties, 2013–2023**



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

\* The statute for CalMedForce states that funding is to be used for primary care, emergency medicine, or any other specialty, as long as it is documented via an annual physician shortage report. Therefore, although psychiatry is not currently funded, it could be funded by CalMedForce in the future.

## Change in and Composition of GME Expansion, 2013–2023

Between 2013 and 2023, just under two-thirds of the new programs established were in priority specialties, with slightly more programs launching from 2018–2023. During that same period, three-quarters of new positions opened were in priority specialties. A spreadsheet listing all new programs opened from 2013–2023 is available separately for download.

**Table 2. GME Expansion in California, 2013–2023**

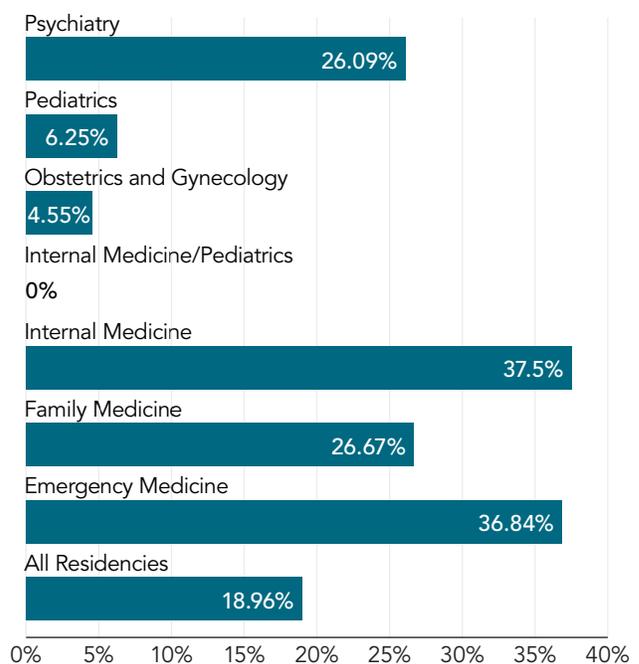
CHANGE	2013–2018	2018–2023
No. new GME programs established, total	74	78
No. new GME programs established, priority specialties	46	49
Percentage of new GME programs that were established in priority specialties	62.2%	62.8%
No. new GME positions added, total	1356	1951
No. new GME positions added, priority specialties	949	1457
Percentage of new GME positions that were added in priority specialties	70.0%	74.7%

Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

## Percentage Change in GME Programs and Positions, 2018–2023

Another perspective on GME expansion is the percentage change in the number of programs and positions over time (Figures 5 and 6). For instance, over the past five years, psychiatry added six new programs to achieve a 26.1% increase in total number of programs across California, whereas family medicine added 16 new programs to achieve a similar (26.7%) increase. GME in general, and all priority specialties except emergency medicine and internal medicine/pediatrics, added significantly more positions between 2018 and 2023.

**Figure 5. Percentage Change in Number of California GME Programs, 2018–2023**



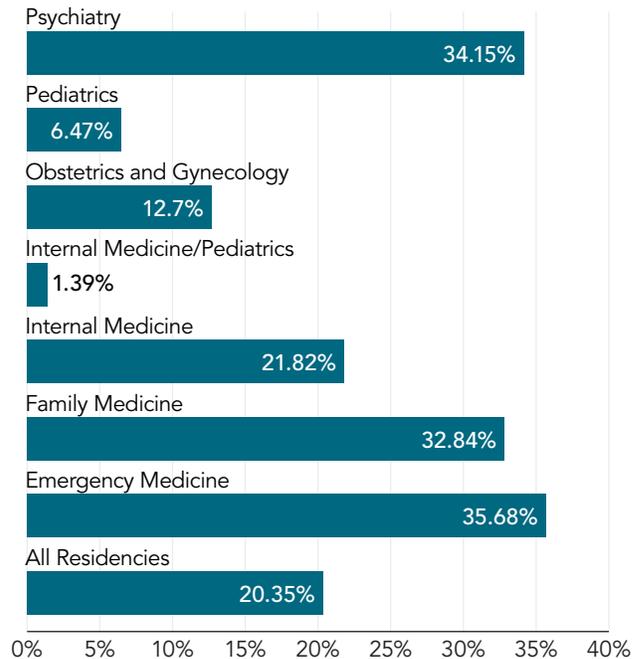
Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

## GME Expansion Becomes More Challenging

Generally, the cost of residency training in California is growing over time due in part to the unionization of residents, regulation over maximum working hours per week, and rising state minimum wage requirements. As residency programs are created, it becomes increasingly difficult to create new ones because of diminishing resources. Not only are new programs often more expensive, either because they are smaller or lack needed infrastructure, but they also lack the physical capacity and internal expertise — such as program directors and faculty — to meet training requirements. In particular, rural communities may not have physicians in the full complement of specialties needed to operate residency programs in some specialties. For example, general pediatrics residency programs are operated by or in partnership with children’s hospitals and/or large academic medical centers, which are not evenly distributed across the state, because they need to offer rotations in multiple pediatric subspecialties.

Sources: Judith Pauwels and Amanda Weidner, “[The Cost of Family Medicine Residency Training: Impacts of Federal and State Funding](#) (PDF),” *Family Medicine* 50, no. 2 (Feb. 2018): 123–127; and [Teaching Health Center Graduate Medical Education \(THCGME\) Cost Evaluation Update](#) (PDF), George Washington University Milken Institute School of Public Health, March 16, 2023; Diane Rittenhouse, Alexandra Ament, and Kevin Grumbach, *A Guide to Graduate Medical Education Funding in California*, California Health Care Foundation (CHCF), February 19, 2019; “[Pediatrics](#),” Association of American Medical Colleges (AAMC), July 22, 2024.

Figure 6. Percentage Change in Number of California GME Positions, 2018–2023



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

## Establishing New Programs and Opening New Positions Takes Time

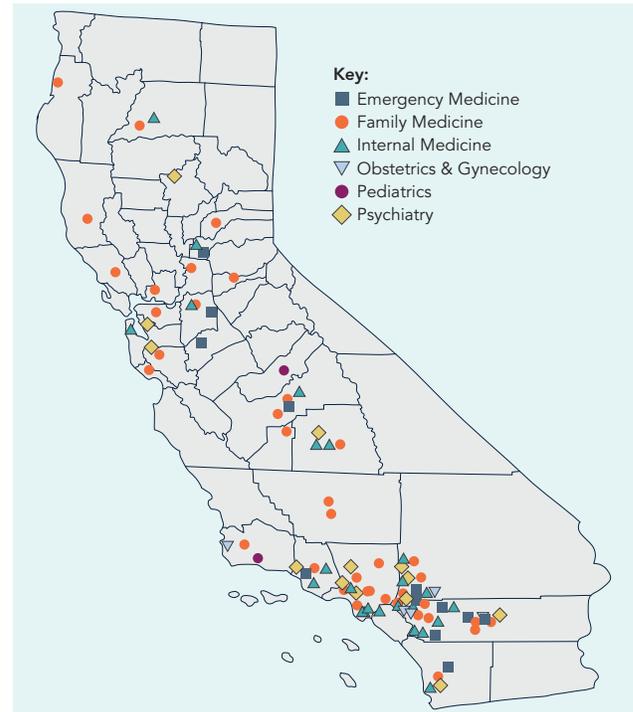
The impact of recent GME expansion grants, particularly grants to establish new programs, is likely not reflected in this report, as new programs often take two to five years of planning before they are ready to begin training their first cohort of residents. Additionally, once new programs are established, they take time to ramp up to full capacity with regard to number of positions. Depending on specialty, it would take a new residency program at least three years from the time the first residency class begins training to reach its full number of positions.

Source: Michelle Barajaz and Teri Turner, “[Starting a New Residency Program: A Step-By-Step Guide for Institutions, Hospitals, and Program Directors](#),” *Medical Education Online* 21 (Aug. 2016).

## Geographic Distribution of New GME Programs

From 2013–2023, most new residencies opened in Southern California, particularly in the Los Angeles, San Diego, and Inland Empire areas (Figure 7). There was some growth in the Central Valley, and a few residencies were established in the northern part of the state. Further analysis is needed to understand how the current geographic distribution of residency programs in California compares to the ideal distribution. This is especially important because specific regions of the state, such as the San Joaquin Valley, the Inland Empire, and the rural north, suffer from long-standing physician shortages and could benefit from focused GME-expansion strategies.<sup>6</sup>

Figure 7. New California Priority Specialty Programs, 2013–2023 (n = 95)



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

# 2019 California Future Health Workforce Commission GME Recommendations: How Far Have We Come?

In 2019, the California Future Health Workforce Commission report set ambitious GME expansion goals for California over the following decade. Although these goals have not yet been met, there has been some progress.

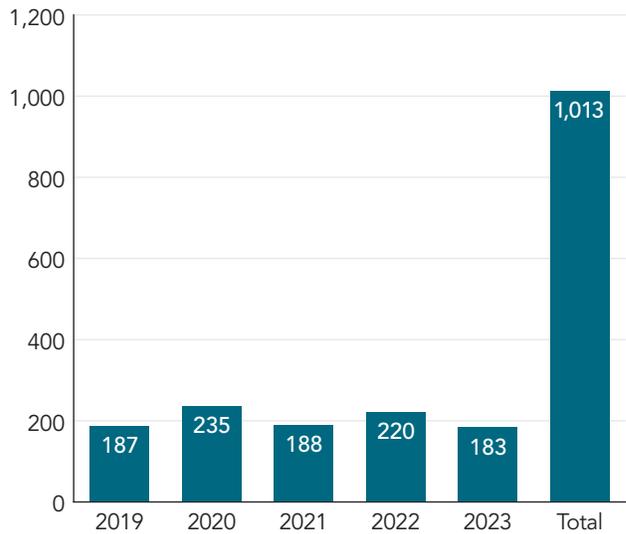
## Commission Recommendation on Primary Care GME

“The number of first-year residents in primary care residency programs would increase by 20% (337 residents per year) between 2018 and 2024, and the increase would be maintained from 2024 to 2029. This would yield an increase of 1,872 graduates of primary care residency programs in California by 2029.”

Source: [Meeting the Demand for Health: Final Report of the California Future Health Workforce Commission](#) (PDF), California Future Health Workforce Commission, February 2019.

Between 2018 and 2023, the number of **primary care GME programs increased by 23.2%**, from 142 to 175 programs. By specialty, internal medicine had the largest percentage increase, growing 37.5% to 55 programs, and family medicine programs increased by 26.7% to 76 programs. Between 2018 and 2023, **1,013 new primary care GME positions were added** resulting in a 20.9% increase (Figure 8). However, the Commission recommended an increase of 337 new positions per year (see text box), which the state has not achieved. Between 2018 and 2023, California added 60.1% of the primary care GME positions recommended by the Commission for that period (Figure 9).

Figure 8. New California Primary Care GME Positions, 2019–2023



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

Figure 9. Progress Toward Commission Goal: Primary Care



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

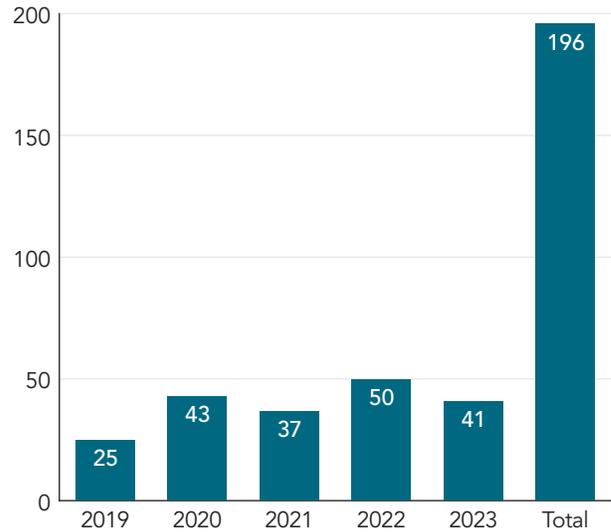
### Primary Care: General Medicine and Subspecialty Patterns

Primary care refers to specialties that care for the whole person (adult or child) rather than focusing on a specific organ system or disease. This report defines primary care specialties as those that have received state funding from Song-Brown and CalMedForce (i.e., family medicine, internal medicine, obstetrics and gynecology, and pediatrics). However, large percentages of physicians who complete internal medicine, obstetrics and gynecology, and pediatrics residencies continue on with fellowship training, subspecializing in other fields such as cardiology or oncology. Therefore, the numbers of positions in these specialties do not correlate 1:1 with the number of positions in primary care. From 2018–2023, internal medicine accounted for 48% of the increased number of positions in specialty priorities.

Sources: JoAnna Leynaar and Mary Pat Frintner, "Graduating Pediatric Residents Entering the Hospital Medicine Workforce, 2006-2015," *Academic Pediatrics* 18, no. 2 (Mar. 2018): 200-7; Paul O'Rourke et al, "Factors Influencing Primary Care Career Choice: A Multi-Institutional Cross-sectional Survey of Internal Medicine Primary Care Residency Graduates," *Journal of General Internal Medicine* (June 2024); and Colin P. West and Denise M. Dupras, "General Medicine vs. Subspecialty Career Plans Among Internal Medicine Residents," *JAMA* 308, no. 21 (Dec. 2012): 2241-47.

Between 2018 and 2023, the number of **psychiatry residency programs increased by 26.1%**, growing by 6 programs to 29 total programs. Over that same time period, the number of **psychiatry GME positions increased by 34.2%, growing by 196 positions** to 770 total positions (Figure 10). However, the Commission recommended increasing the number of psychiatry positions by 375 residents per year. That means that between 2018 and 2023, California added 10.5% of the psychiatry GME positions recommended by the Commission for that period (Figure 11).

Figure 10: New California Psychiatry GME Positions, 2018–2023.



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

Figure 11: Progress Toward Commission Goal: Psychiatry



Source: Created by Mathematica based on data from the Accreditation Council for Graduate Medical Education, 2024.

### Commission Recommendation on Psychiatry GME

“The number of first-year residents in psychiatry residency programs would increase by 152 to 527, which would yield a 247% (375 residents per year) increase in graduates of psychiatry residency programs between 2018 and 2025. The increase would be maintained from 2025 to 2029, which would yield an increase of 2,202 graduates of psychiatry residency programs by 2029.”

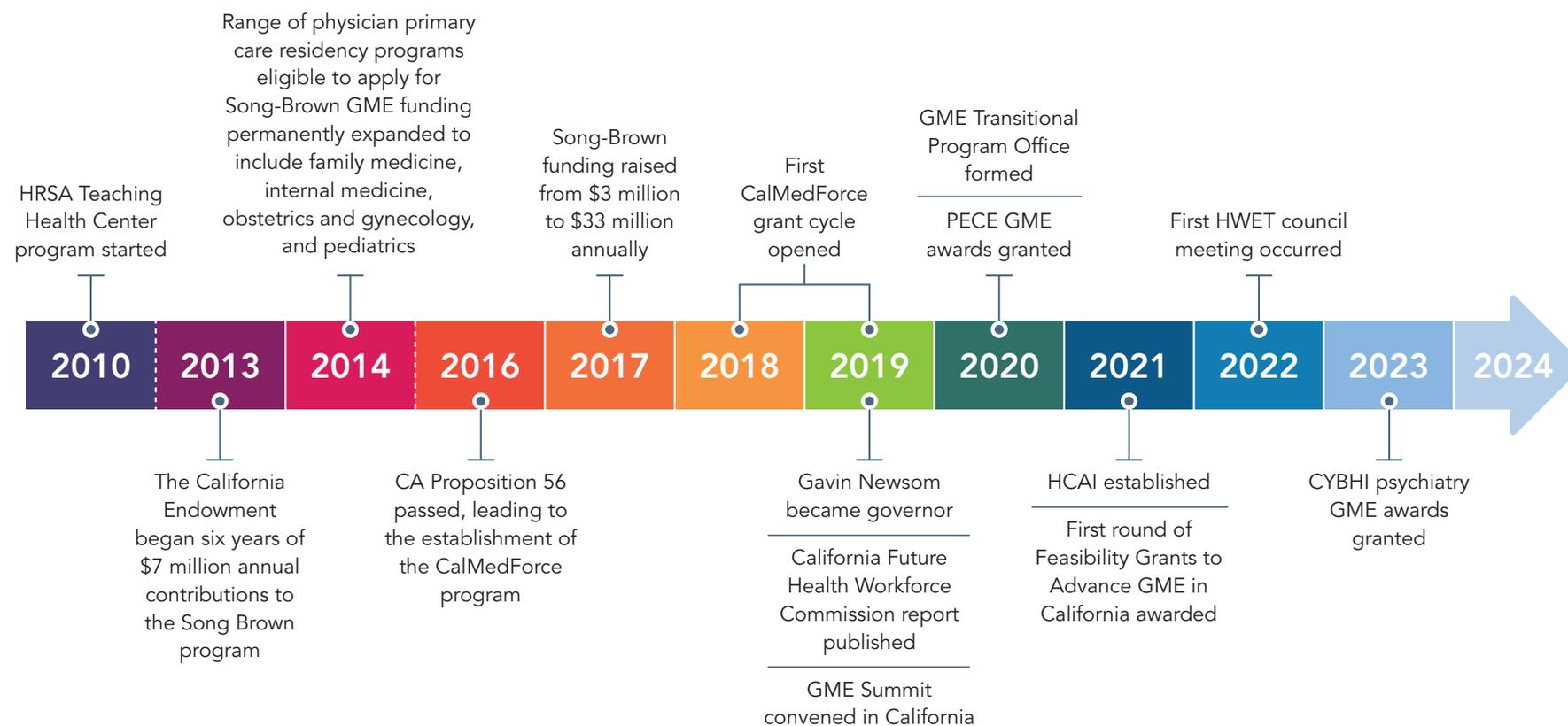
Source: [Meeting the Demand for Health: Final Report of the California Future Health Workforce Commission](#) (PDF), California Future Health Workforce Commission, February 2019.

## Conclusion

California has a severe physician shortage, particularly among primary care and psychiatric physicians, that negatively impacts many health equity and access issues.<sup>7</sup> Increasing the availability of training through GME expansion is a critical way to increase the supply of physicians.<sup>8</sup> Recognizing this, in 2019, the California Future Health Workforce Commission prioritized GME expansion and set ambitious goals to ensure California would have the needed health workforce for its population. Based on the Commission’s recommendations and other stakeholder efforts to expand the physician workforce, state funding for GME expansion increased significantly.

Although California has experienced growth in GME overall and particularly among the priority specialties, both in the number of new programs as well as the number of new positions offered, this growth has not kept pace with the ambitious recommendations set forth by the Commission. Especially concerning is the lack of investment in psychiatry GME expansion to date, as the need for more physicians in that specialty is especially dire, and programs are notably difficult to launch. Furthermore, funding levels were reduced in the California 2024–2025 state budget and may be in jeopardy in future years, threatening the expansion progress that has been made to date.

## Appendix A. Timeline of Key Events Impacting GME in California



Notes: *CYBHI* is Children and Youth Behavioral Health Initiative, *GME* is graduate medical education; *HCAI* is Department of Health Care Access and Information, formerly the Office of Statewide Health and Planning and Development, *HRSA* is Health Resources and Services Administration, *HWET* is Health Workforce Education and Training, and *PECE* is Psychiatry Education Capacity Expansion.

Source: Created by author, 2024.

## Endnotes

1. [Annual Report: Update on California's Physician Workforce](#) (PDF), Healthforce Center at UCSF, August 2023.
2. [Meeting the Demand for Health: Final Report of the California Future Health Workforce Commission](#) (PDF), California Future Health Workforce Commission, February 2019.
3. "Song-Brown Healthcare Workforce Training Programs," California Department of Health Care Access and Information (HCAI), accessed September 21, 2024; "CalMedForce: Growing California's Next Generation of Physicians," Physicians for a Health California, accessed September 21, 2024.
4. "[California Proposition 56](#)," California Department of Health Care Services (DHCS), accessed September 26, 2024.
5. "[Psychiatric Education Capacity Expansion \(PECE\) – Psychiatry Residency Grant Program](#)," HCAI, accessed September 26, 2024; and "[Master Plan for Kids' Mental Health: Putting Our Kids First](#)," Children and Youth Behavioral Health Initiative (CYBHI), accessed September 26, 2024.
6. Rachel Livinal, "[The San Joaquin Valley Needs More Doctors. New University Programs are Producing Them](#)," KVPR, September 13, 2023.
7. Sarah Arnquist, "[Addressing Medi-Cal Behavioral Health Workforce Shortages Through Non-Financial Incentives](#)," CHCF, May 31, 2024; Arturo Vargas Bustamante, "[California Grapples with Primary Care Provider Shortage](#)," UCLA Center for Health Policy Research, April 28, 2023.
8. "[GME Startup Solutions](#)," Physicians for a Health California, accessed September 26, 2024.