California Health Care Foundation

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The Role of State and Federal Funding for Graduate Medical Education in California

This explainer provides information on the financing of graduate medical education, also known as physician residency training. An accompanying report, *Graduate Medical Education (GME) Expansion in California, A Progress Update: 2013-2023*, provides information on the growth of GME programs and positions statewide.

Graduate medical education (GME) is critical to addressing California's health workforce shortage and ensuring the physician workforce can meet the needs of California today and in the future.[1] GME refers to multi-year residency and fellowship training undertaken after the completion of medical school and is required to obtain a full license to practice medicine independently in California.[2] Investing in GME has multiple benefits, including:

- Training future physicians to replace those who retire, leave the workforce, or relocate out of state.
- Boosting Californians' access to care in the communities in which physicians practice during and after their residency.[3]
- Improving health care quality and advancing medical education and research in the health care systems in which residents train.[4]

GME is financed by the federal and state governments as well as from clinical revenue generated by the care that residents and fellows provide under supervision.[5] While the majority of GME funding comes from federal sources, state investments in GME are important because state dollars can be used to support the implementation costs of new residency programs, supplement funding for existing programs, and expand programs ineligible for federal support. State dollars can also be strategically allocated by specialty, location, or setting to address health workforce shortages.

Regardless of its source, consistent and stable funding is key to GME's success. It can cost millions of dollars and take three to seven years to start a new GME program, and the annual cost to train a resident in an established program can reach a quarter of a million dollars.[6] Residency training requires at least three years to complete, with certain specialties requiring more time.

Without stable funding, it can be difficult for hospitals that have never had a GME program to establish a new program, or for existing programs to maintain or expand positions to meet the demand from the growing number of medical school students.[7] This can have a real impact on medical students' residency options and specialty selections and for California's physician workforce as a whole.

In recent years, federal and state funding for GME in California has increased, and the state has seen new residency positions and programs emerge.[8] Yet, California still ranks in the bottom half of states in terms of the number of residents and fellows in GME programs per capita.[9] Efforts to increase funding for residency positions or GME programs will help alleviate the physician workforce shortage

Explainer

in California, but consistent and stable funding is critical to allow for program planning, implementation, and maintenance over time.

The following sections provides a brief review of federal and state funding for GME programs in California.

Laying the Groundwork with Increased Federal Support

Spending in the federal budget is divided into three categories: discretionary, mandatory, and net interest.

- **Discretionary spending:** This category refers to all federal spending that must be appropriated by Congress each year as part of annual appropriations legislation. Any program or activity authorized by a law that does not also authorize spending must be funded through appropriations legislation. Examples include defense spending, civilian agency budgets, and certain federal grant programs.
- **Mandatory spending:** This category covers federal spending that is not authorized by annual appropriations legislation. Instead, this spending is written into the laws that authorize programs or activities. Mandatory spending for some programs and activities is in effect indefinitely, while for others, an end date is set. As examples, mandatory spending is indefinite for Medicare and Social Security, but must be reauthorized periodically for the Supplemental Nutrition Assistance Program (SNAP).
- **Net interest:** This category refers to money spent on interest payments on federal debt.

Because Congress must approve discretionary spending each year, programs and activities funded with discretionary spending may face more scrutiny from lawmakers. Likewise, mandatory spending that must be reauthorized periodically may also receive scrutiny. On the other hand, mandatory spending that is in effect indefinitely is generally considered ongoing until the authorizing law is changed.

Source: "What is Mandatory and Discretionary Spending?," in *The Tax Policy Briefing Book*, Tax Policy Center, last updated January 2024.

The majority of funding for GME in California comes from federal sources, which support physician training via different mechanisms, agencies, and programs. These include:

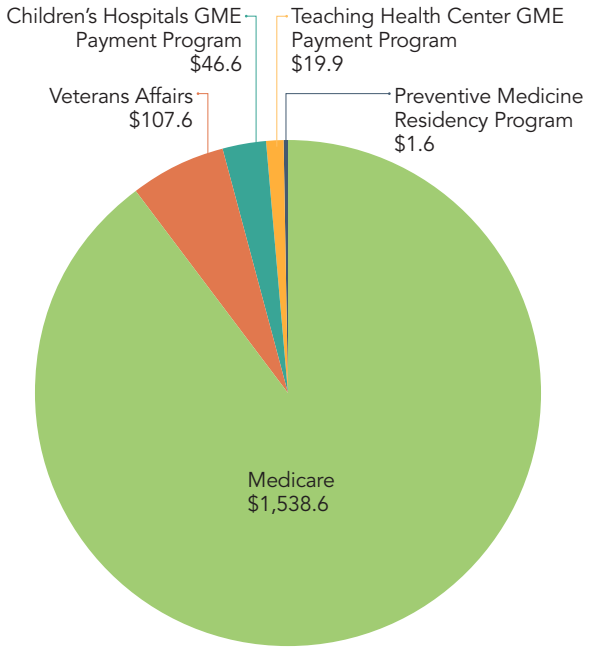
- **Payments made by Medicare.** Mandatory Medicare funding for GME began in 1965, when the program was established by Congress.[10] For over 30 years, Medicare made payments to hospitals for the reported costs of GME without limits on the numbers of physicians trained. In 1997, payments to training programs were capped based on the numbers of residents and fellows in training the prior year.[11] These caps froze the number and geographic distribution of Medicare-supported residencies established before 1997. Hospitals that have never had a GME program — referred to as GME-naive hospitals — can receive Medicare support after accreditation and when training begins. Medicare funding caps are established in a program's fifth year.[12] Medicare payments are meant to cover some — not all — training costs.[13]
- **Training residents at Department of Veterans Affairs (VA) and Department of Defense facilities.** For nearly 80 years, the VA has partnered with academic medical centers to train health care professionals and improve patient care. This partnership includes rotations for residents and faculty within VA medical facilities. While they are in training at VA facilities, the VA covers GME costs.[14] The Department of Defense also trains residents in military hospitals, many of whom are active-duty military

doctors completing service obligations. VA and Department of Defense spending on GME is categorized as discretionary.[15]

- **HRSA grant programs.** The Health Resources and Services Administration (HRSA) operates the following grant programs that support specific types of GME.
  - **Children's Hospital Graduate Medical Education Payment Program.** Created in 1999, this program supports pediatric medical residencies in children's hospitals. Its intent is to supplement Medicare funding for physician training, which, due to the nature of the Medicare program, primarily supports facilities providing health care for older adults. The program must provide grants to all children's hospital applicants that meet eligibility requirements. Because spending for this program is discretionary, as more programs apply for funds, each program receives a smaller share of the total appropriation.[16]
- **Teaching Health Center Graduate Medical Education Payment Program.** This program provides funds for community-based primary care residencies in underserved and rural settings outside of hospitals to boost experience in outpatient settings. Initial funding was provided as part of the Affordable Care Act and became available for teaching health centers in 2011. Now, funding for these residency programs is mandatory but term limited, which creates uncertainty as ongoing support is subject to reauthorization by Congress. [17]
- **Preventive Medicine Residency Program.** The goal of this program is to promote GME in preventive medicine, which is the only specialty that includes both patient care and population health. Grant funds are distributed to programs at traditional training sites, public health departments, and schools.[18]

Nine in ten federal dollars for GME in California come from Medicare, which is by far the largest source of funding for physician training in California and in the US (see Figure 1). In the 2021 federal fiscal year — the most recent year for which data are available for all federal funding sources — Medicare provided more than $1.5 billion in payments to California GME programs. That same year, the VA provided an additional $107.6 million — roughly 6% of the total federal funds allocated to California GME — for GME in VA facilities in the state. The remainder of federal funds were distributed through HRSA's grant programs: $46.6 million through the Children's Hospitals GME Payment Program, $19.9 million through the Teaching Health Center GME Program, and $1.6 million through the Preventive Medicine Residency Program.

Figure 1. Federal Funding for GME in California (in Millions), FY 2021



Notes: *GME* is graduate medical education; *FY* refers to the federal fiscal year. Totals do not include Department of Defense funding for graduate medical education. The Department of Defense does not collect or report these data. See "Graduate Medical Education That Meets the Nation's Health Needs," and Heisler et al., *Federal Support*.

Sources: "Data Tables: Graduate Medical Education For Teaching Hospitals," Robert Graham Center, accessed July 25, 2024; USASpending, US Bureau of the Fiscal Service, accessed July 25, 2024; and author's analysis of data from the Veterans Health Administration.

Federal GME funding increased by more than 70% between 2015 and 2021 as a result of increased funding across all federal sources, most notably Medicare. One reason Medicare's funding has increased so dramatically is the establishment of new GME programs, which are eligible for Medicare funding after they earn accreditation and begin training residents. From 2015 to 2021, 111 newly accredited programs in California received Medicare funding for more than 900 filled positions.[19] Additionally, the amount of funding per resident that Medicare provides is adjusted annually for inflation, although some argue that per-resident payment levels are inequitable and often inadequate.[20]

Growth in funding from other federal sources is a direct result of actions undertaken by Congress in the past decade, including:

- Authorizing discretionary funding in 2014 to increase VA-funded residency positions by 15% over a 10-year period.[21] VA funding for GME in California has increased 19% from 2015 to 2022.
- Increasing discretionary appropriations for the Children's Hospitals GME Payment Program from $265 million in 2015 to $350 million in 2021.[22] Funding to California programs has increased 45% during that same period.
- Raising the cap on funding for the Teaching Health Center GME Payment Program.[23] While funding for California programs has increased by 48% from 2015 to 2021, Congress's piecemeal approach to funding this program has resulted in instability for teaching centers and their residents.[24]

Finally, the value of Preventive Medicine Residency Program grants issued to California increased by 19% overall from 2015 to 2021 (although overall funding for this program has decreased since 2015).

The federal government does not have a centralized planning process across all sources of GME funding, which means important decisions about where and in which specialties to train physicians are often left to the discretion of training institutions or individual federal programs. State funding can be strategically used to fill this gap.

Targeting Needs Through State Support

State GME funds allow for strategic investment in the physician workforce that addresses the specific health care needs of Californians. This contrasts with federal funds, which typically do not allow for centralized planning to prioritize populations, specialties, or geographies. State funds can target two key criteria:

- **Location.** Three in four physicians who complete residency training in California remain in the state to practice medicine.[25] Physicians are also more likely to practice medicine near their residency program.[26] State investments in GME programs in underserved areas of the state could increase the supply of physicians in targeted regions.
- **Medical Specialty.** State leaders have already prioritized medical specialties that address health workforce shortages, namely emergency medicine, family medicine, internal medicine, obstetrics and gynecology, and pediatrics.[27] State dollars can be used to continue investment in these specialties, or they can be adjusted as patient needs diversify and the health workforce shifts over time.

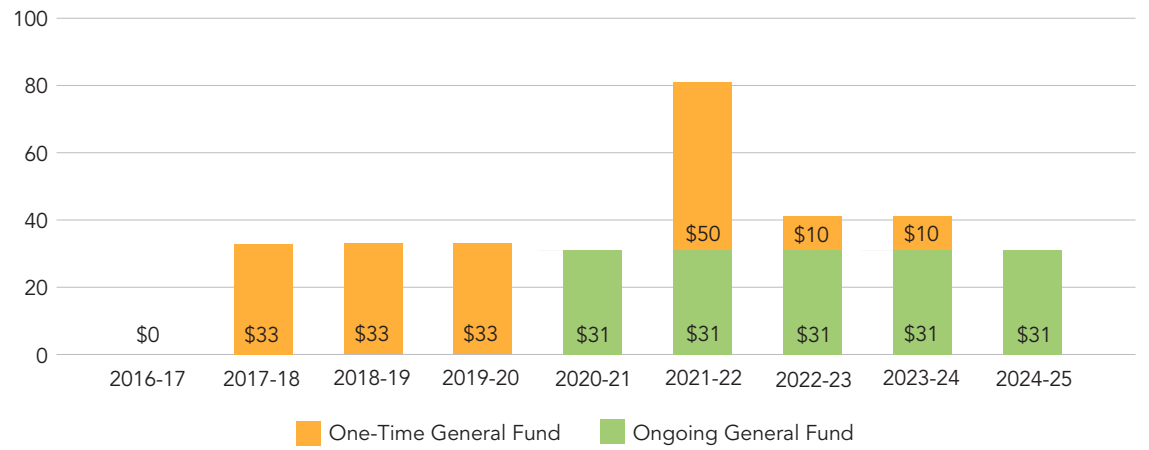
State dollars can also be used to implement new residency programs, supplement funding for existing programs, or expand programs that are ineligible for federal support. California currently funds two GME programs: The Song-Brown Program and CalMedForce.

The Song-Brown Program

The Song-Brown Healthcare Workforce Training Program was established in 1973 to address a shortage of family medicine physicians in California.[28] Today, the program strives to increase the number of individuals receiving primary care education in family medicine, internal medicine, obstetrics and gynecology, or pediatrics, in areas of unmet need across the state.[29] This program is administered by the Department of Health Care Access and Information (HCAI), the state department charged with monitoring and developing California's health workforce.

Prior to 2016, Song-Brown funding levels were low and inconsistent. State leaders significantly increased support for the program as part of the 2016–2017 spending plan by providing $100 million in one-time general fund dollars over a three-year period beginning in 2017–2018 (see Figure 2).[30] Policymakers made general fund dollars for Song-Brown residency programs available on an ongoing basis beginning in 2020–2021, which provided some financial stability. The Song-Brown program also received significant, one-time general fund support in the 2021–2022, 2022–2023, and 2023–2024 fiscal years as part of a large, multi-year investment in California's health workforce.[31]

Figure 2. General Fund Support for GME Through the Song-Brown Program (in Millions), FY 2016–17 to 2024–25



Notes: *FY* refers to the state fiscal year. Figures do not include special fund dollars for the Song-Brown program, program funds for nursing or physician assistant programs, or loan repayments. Data do reflect funding for state operations for the Song-Brown program.

Source: Author's analysis of legislative and administrative documents from the California Department of Finance and the California Legislative Analyst's Office (LAO); and author's personal communication with the LAO.

However, state leaders faced a large budget deficit while negotiating the 2024–2025 spending plan. To balance the budget, many health workforce investments from prior years were eliminated, including roughly $25 million for the Song-Brown program.[32] Despite the state's fiscal condition, the final 2024–2025 Budget Act maintained nearly $80 million general fund dollars that had been previously budgeted for the Song-Brown program while sustaining the ongoing general fund support for the program.[33]

Overall, increased funding for the Song-Brown program in recent years has helped to prioritize and grow GME programs for several high-priority specialties, including family medicine and internal medicine. However, sustaining this momentum and ensuring these programs can continue to train physicians in high-need areas of the state requires stable, ongoing funding.

CalMedForce

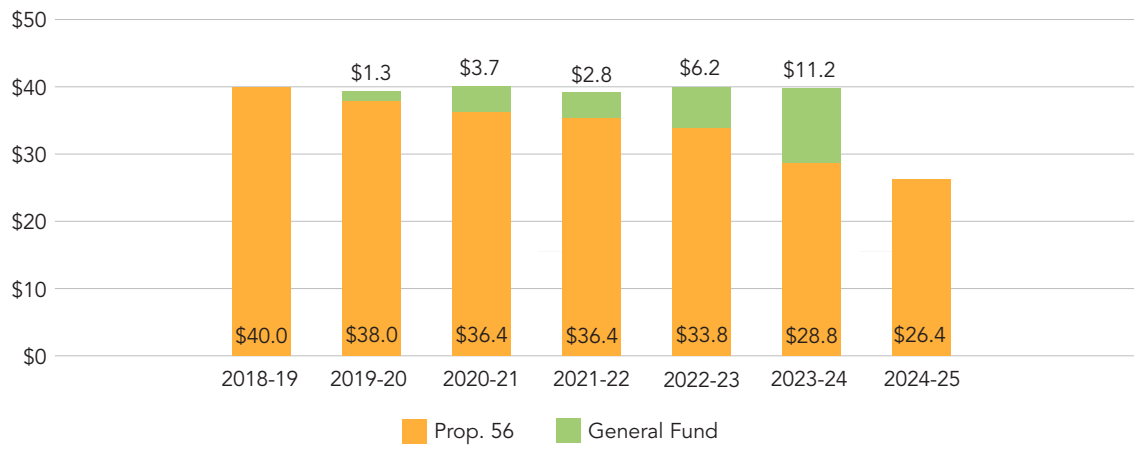
Funding for CalMedForce comes from Proposition 56, a voter-approved ballot measure that increased the state tax on tobacco products in 2016. The measure directed new revenue to health care, health research, and public health programs. The main goal of the funding was to increase the number of primary care (i.e., family medicine, internal medicine, obstetrics and gynecology, and pediatrics) and emergency physicians in California.[34] Thus, some funds from the measure are directed to the UC system to provide GME program grants for medically underserved areas and populations.[35]

In the 2017–2018 state fiscal year, the UC system received $50 million to offset a reduction in general fund dollars for its base budget.[36] This funding was distributed to five UC campuses operating GME programs.[37] For the 2018–2019 fiscal year, the UC contracted with Physicians for a Healthy California to administer a new GME grant program funded with Proposition 56 dollars. The resulting program, CalMedForce, supports GME training in five specialties across public and private institutions statewide.[38]

When Proposition 56 was approved by voters in November 2016, it was acknowledged that successful tobacco control programs, funded in part with the new revenue, would reduce tobacco usage. Therefore, over time, fewer dollars would be available for the purposes set forth in the ballot measure. In 2019–2020, state leaders began to supplement those losses with general fund dollars to ensure GME funding for CalMedForce would remain stable at $40 million annually.[39] From the 2019–2020 fiscal year to the 2023–2024 fiscal year, the general fund share of support for CalMedForce increased from 3% to 28% (see Figure 3).

Policymakers reduced funding for GME as part of the 2024–2025 spending plan and to address the state's budget deficit. This included the elimination of $75 million general fund dollars that the UC was to receive annually over the subsequent five years for GME grants as part of the managed care organization (MCO) tax plan.[40] The budget act also eliminated a $14 million general fund backfill for the CalMedForce program, which reduced CalMedForce funding from the previous year by one-third to $26 million.[41] CalMedForce estimates that the $14 million budget cut will result in 46 fewer program awards and 73 fewer positions compared to 2023-2024, despite a 12% increase in grant applicants.[42]

Figure 3. State Funding for CalMedForce GME (in Millions), FY 2018–19 to 2024–25



Note: FY refers to the state fiscal year.

Sources: "Proposition 56," University of California Office of the President, accessed July 25, 2024; and author's personal communication with the Legislative Analyst's Office.

A new ballot measure — Proposition 35, which would permanently determine future MCO tax dollar allocations — will go to the voters on November 5, 2024.[43] If it passes, the UC will receive $75 million each year in 2025 and 2026 for GME programs, and allocations for physician training from 2027 and beyond will be determined by a funding formula, rather than as part of the annual state budget process. This would provide much-needed funding stability for GME in California.

One-Time State Funds

In recent years, state leaders have also provided intermittent, one-time general fund support for other GME efforts, particularly in the field of psychiatry. Since the 2018–2019 state fiscal year, these investments have included:[44]

- **$15 million one-time for psychiatry GME in the 2018–2019 budget act.** These funds, which were to be fully expended by June 2024, were allocated to the University of California, Riverside, School of Medicine to expand their psychiatry GME program and its use of telemedicine.[45]
- **$4.65 million one-time for GME in the 2019–2020 budget act.** This includes $2 million for pediatric residencies and $2.65 million to fund scholarships for primary care and emergency physicians receiving Primary Care Clinician Psychiatry Fellowships from either the University of California at Davis Medical School or the University of California, Irvine, School of Medicine.[46]
- **$6.5 million one-time for a new psychiatry residency program in the 2023–2024 spending plan.** This funding was for the Department of State Hospitals to develop a new residency program at the state hospital in Patton, California.[47]
- **$10 million one-time over two years for psychiatry GME programs.** Funded in the 2022–2023 and 2023–2024 spending plans, these grants were to be distributed to training programs that prioritize underserved Californians.[48]
- **$50 million one-time over two years for addiction psychiatry and addiction medicine fellowship programs.** This funding was part of the 2022–2023 budget agreement and was to be split between the 2022–2023 and 2023–2024 fiscal years.[49]

These investments have also been impacted by the state's budget deficit, and two-thirds of the total funding outlined here was cut in the 2024–2025 spending plan.[50]

By 2028, it is estimated that the number of psychiatrists in California will be 41% below what is necessary to maintain current access levels, which are widely considered to be inadequate for population health needs.[51] And while more medical students enter psychiatry residency programs every year, California psychiatry GME programs are already at capacity, even with recent increases in statewide programs and positions.[52]

Neither the Song-Brown program nor CalMedForce focuses on psychiatry GME, and the majority of federal funding doesn't target individual specialties. Without targeted support to maintain or expand existing programs or to create new programs, the shortage of psychiatrists will continue to worsen as practicing psychiatrists retire or leave the field, exacerbating the state's behavioral health workforce shortage.[53]

Conclusion

More than 11,000 physicians received GME training in California in 2023, marking a significant increase over the past decade.[54] While the majority of GME funding comes from federal sources — primarily Medicare — state dollars have been strategically invested to increase the number of residents in certain geographies and high-priority specialties in order to address California's health workforce shortages.

The state's recent budget problems have resulted in policymakers cutting funding for GME grant programs, which could be detrimental to the programs and positions that that were recently established or expanded. Reduced funding also limits state leaders' abilities to target GME investments in the specialties and locations that will most effectively address California's physician shortage. Ultimately, this will undermine Californians' access to the health care they need to live healthy lives.

About the Author

Kristin Schumacher, PhD, MSW, is principal owner at Aster Policy Analytics, a public policy research firm that produces data-driven analyses focused on gender, racial, and economic justice. Prior to launching Aster Policy Analytics, Schumacher worked in various mission-driven organizations working to improve the well-being of women, children, and families. Most recently, she led community-driven budget and policy analyses as research director at Kids Forward, the oldest child advocacy organization in the US.

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About the Foundation

The California Health Care Foundation 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.

CHCF informs policymakers and industry leaders, invests in ideas and innovations, and connects with changemakers to create a more responsive, patient-centered health care system. For more information, visit www.chcf.org.

Endnotes

1 Kevin Barnett et al., *Meeting the Demand for Health: Final Report of the California Future Health Workforce Commission*, California Future Health Workforce Commission, February 2019.

2 California Business and Professions Code § 2096.

3 Krystal Tomei et al., "Beyond Training the Next Generation of Physicians: The Unmeasured Value Added by Residents to Teaching Hospitals and Communities," Academic Medicine 97, no. 11 (Nov. 2022): 1592–1596.

4 Richard Alweis et al., "Benefits of Developing Graduate Medical Education Programs in Community Health Systems," *Journal of Community Hospital Internal Medicine Perspectives*, 11, no. 5 (Sept. 2021): 569–575.

5 Diane Rittenhouse et al., *Guide to Graduate Medical Education Funding in California* (PDF), California Health Care Foundation (CHCF), September 2018.

6 *Physician Workforce: Caps on Medicare-Funded Graduate Medical Education at Teaching Hospitals*, US Government Accountability Office, May 21, 2021.

7 Rittenhouse et al., Guide to Graduate Medical Education Funding.

8 Alexandra Ament and Diane Rittenhouse, *Graduate Medical Education Expansion in California, A Progress Update: 2013-2023*, CHCF, October 2024.

9 Natalie Felida, Zakia Nouri, and Michael Dill, *2021 State Physician Workforce Data Report*, Association of American Medical Colleges (AAMC), January 2022.

10 Elayne Heisler et al., *Federal Support for Graduate Medical Education: An Overview* (PDF), Congressional Research Service (CRS), updated December 27, 2018.

11 Marco Villagrana, *Medicare Graduate Medical Education Payments: An Overview* (PDF), CRS, updated September 29, 2022.

12 "Graduate Medical Education That Meets the Nation's Health Needs," Committee on the Governance and Financing of Graduate Medical Education, Board on Health Care Services, Institute of Medicine, 2014.

13 Villagrana, *Medicare Graduate Medical Education Payments*.

14 Andrea Birnbaum, Paul Greenberg, and Karen Sanders, "75 Years of the Historic Partnership Between the VA and Academic Health Centers," *Federal Practitioner* 39, no. 9 (Sept. 2022): 368–370.

15 Heisler et al., *Federal Support*.

16 Heisler, *Children's Hospital Graduate Medical Education (CHGME)* (PDF), CRS, updated June 13, 2023.

17 Heisler et al., *Federal Support*; and Michelle Andrews, "Funding Instability Plagues Program That Brings Docs to Underserved Areas," *KFF Health News*, June 13, 2024.

18 Rittenhouse et al., *Guide to Graduate Medical Education Funding*.

19 Ament and Rittenhouse, *Progress Update*.

20 Fitzhugh Mullan, Candice Chen, and Erika Steinmetz, "The Geography of Graduate Medical Education: Imbalances Signal Need for New Distribution Policies," *Health Affairs* 32, no. 11 (Nov. 2013): 1914–1921.

21 Kathleen A. Klink et al., "Veterans Affairs Graduate Medical Education Expansion Addresses U.S. Physician Workforce Needs," *Academic Medicine* 97, no. 8 (Aug. 2022): 1144–1150.

22 Heisler, *CHGME*.

23 Heisler, *The Teaching Health Center Graduate Medical Education (THCGME) Program: Increased Funding and Policy Changes in BBA 2018* (PDF), CRS, February 16, 2018.

24 Alexander Phillips and Eli Adashi, "The Teaching Health Center Graduate Medical Education Program: A Permanent Funding Imperative," *Journal of Graduate Medical Education* 15, no. 4 (Aug. 2023): 419–423.

25 *Table C6: Physician Retention in State of Residency Training, by State*, AAMC, 2023.

26 Ernest Black Fagan et al., "Family Medicine Graduate Proximity to Their Site of Training: Policy Options for Improving the Distribution of Primary Care Access," *Family Medicine* 42, no. 2 (Feb. 2015): 124–30.

27 Ament and Rittenhouse, *Progress Update*.

28 SB 1224 (Cal. 1973).

29 "Song-Brown Healthcare Workforce Training Programs," Department of Health Care Access and Information (HCAI), accessed August 2, 2024.

30 Gabrielle Petek, *The 2019–20 Budget: Assessing the Governor's Primary Care Physician Residency Proposals*; and "2017–18 State Budget," California Department of Finance (DOF), June 27, 2017.

31 Kristin Schumacher, *How California is Strengthening Its Health Workforce: An Explainer*, CHCF, May 21, 2024.

32 AB 118 (Cal. 2023).

33 "2024-25 State Budget," DOF, June 26, 2024.

34 "Proposition 56," University of California Office of the President, accessed July 25, 2024.

35 Ament and Rittenhouse, *Progress Update*; and *Proposition 56: Cigarette Tax to Fund Healthcare, Tobacco Use Prevention, Research, and Law Enforcement* (PDF), Legislative Analyst's Office (LAO), accessed July 21, 2024.

36 "Proposition 56," UC Office of the President.

37 *Use of Proposition 56 Funding: 2017–18 Appropriation* (PDF), UC Office of the President, accessed July 25, 2024.

38 "Proposition 56," UC Office of the President.

39 "2019–20 State Budget," DOF, June 27, 2019.

40 AB 118 (Cal. 2023).

41 "2024-25 State Budget."

42 *CalMedForce Budget Cut Impact: FY 2024-25 Cycle*, Physicians for a Healthy California, October 2024.

43 "Proposition 35: Provides Permanent Funding for Medi-Cal Health Care Services," LAO, accessed July 19, 2024.

44 HCAI has also used flexible state funds from the Children and Youth Behavioral Health Initiative and Workforce Education and Training to provide a relatively small amount of intermittent funding for psychiatry GME. See Schumacher, *How California is Strengthening Its Health Workforce*.

45 *University of California: 2023 Psychiatry Graduate Medical Education (GME) and Expansion of Telemedicine* (PDF), University of California Office of the President, November 29, 2023.

46 AB 74 (Cal. 2019); and "Train New Trainers: Primary Care Psychiatry Fellowship (PDF)," University of California, Irvine, School of Medicine.

47 "2023 Budget Act Highlights (PDF)," California Department of State Hospitals, July 1, 2023.

48 SB 154 (Cal. 2022).

49 "2022–23 State Budget," DOF, June 27, 2022.

50 AB 108 (Cal. 2024).

51 Janet Coffman, *California's Psychiatry Workforce Challenges* (PDF), Healthforce Center at UCSF, March 2020.

52 Mark Moran, "Number of Students Matching Into Psychiatry Increases for 13th Year," *Psychiatric News* 59 ,no. 5 (Apr. 2024); *2024 Match Results by State, Specialty, and Applicant Type*, The National Resident Matching Program, March 20, 2024; and Ament and Rittenhouse, *Progress Update*.

53 Coffman, *California's Psychiatry Workforce Challenges*; and Rittenhouse et al., *Graduate Medical Education Funding in California: Psychiatrist Shortage* (PDF), California Health Care Foundation, October 2019.

54 Ament and Rittenhouse, *Progress Update*.