Technical Appendix: Federal Funds Expand and Support California's Health Workforce

Federal Funds Expand and Support California's Health Workforce provides an estimate of federal funds distributed in California during the 2022 federal fiscal year to educate, train, and retain the health workforce. This technical appendix provides an overview of the methodology used to generate these estimates.

The analysis relied on three primary sources of data to generate an estimate of federal health workforce funding:
1) US Centers for Medicare and Medicaid
2) US Department of Veterans Affairs
3) USASpending

The method to calculate health workforce funding from each of these sources is unique and documented below.

The US Centers for Medicare & Medicaid Services

The US Centers for Medicare & Medicaid Services (CMS) provides Medicare payments to California hospitals to cover a portion of the training costs of graduate medical education (GME) programs. This is by far the largest single source of federal health workforce funding in California.[1] CMS requires all Medicare-certified providers to file an annual cost report (Form 2552-10) that provides detailed information on the cost to deliver care to Medicare enrollees.[2] The hospital cost report includes the indirect and direct costs of GME.

Providers submit these reports to a fiscal intermediary that reconciles the data with CMS, and CMS then makes the data in the reports publicly available via the Healthcare Cost Reporting Information System (HCRIS). This system provides data for every year that a report has been submitted by the provider, even if reports are still in the reconciliation process. The data are updated on a quarterly basis to reflect changes to existing reports or newly submitted reports. [3]

This analysis utilized the 2022 data file, which was updated by CMS on April 1, 2025, because it was the most comprehensive year of data available at the onset of this project. The HCRIS page also provides supplemental documents, including a worksheet that outlines which values to sum to calculate the total cost for Indirect Medical Education (IME) and Direct Graduate Medical Education (DGME).

After the data were downloaded, the 2022 SAS dataset was imported into Stata (Version 18), a data processing program equipped to handle large datasets; providers located outside of California were removed from the dataset; and the variables for IME and DGME were totaled to calculate an estimate of the total cost for GME in California for 2022. The results were exported to an Excel file. Due to the ongoing reconciliation process, these totals are considered point-in-time estimates and could change as CMS updates data on a quarterly basis.

The US Department of Veterans Affairs

The US Department of Veterans Affairs (VA) offers various programs to support health professionals at Veterans Health Administration (VHA) facilities across the state. Funding data for these health workforce programs is not publicly available. As a result, this analysis relied on a fee-based Freedom of Information Act (FOIA) request submitted to the VHA Central FOIA Office, which yielded data for the following programs:[4]

- Medical GME
- Dental GME
- Nursing Education
- Associated Health Education
- Advanced Fellowships and Professional Development
- Employee Incentive Scholarship Program
- Health Professional Scholarship Program
- National Nursing Education Initiative
- VA National Education for Employees Program
- VA Student Trainee Experience Program
- Specialty Education Loan Repayment Program

USASpending

The USASpending website is the official open data source of the federal government, and it provides information about federal awards, including grants, contracts, and loans. An up-to-date list of health workforce programs across the federal government does not exist, so this analysis utilized the query function to download a data file with all prime award transactions for California for the 2022 fiscal year. Prime awards are agreements between the federal government and a non-federal entity to implement a federal program.[5]

The USASpending data contained more than 645,000 fiscal transactions to entities in California during the 2022 federal fiscal year. Due to the size of the dataset, data were imported into Stata. A number of variables were used to identify transactions that supported the health workforce. These variables included:

1) **"Program Activities Funding This Award."** This variable provides information on a specific activity or project.[6] Any transaction with either "Health Workforce" or "Health Profession" listed as a value was tagged as a health workforce transaction.
2) **"Transaction Description."** This variable provides a brief description of the purpose of the funded program or activity.[7] Transactions that contained descriptions with a key term relating to the health workforce, such as "medical training" or "health scholarship," were tagged. The list of key terms was developed in an iterative process and contained more than 50 items.
3) **"Assistance Listing."** This variable represents the number assigned to a federal program in the Catalog of Federal Domestic Assistance and the US System for Award Management (SAM). SAM publishes an Annual Publication of Assistance Listings with descriptions of every federal program with an assistance listing.[8] Th Functional Index, Subject Index, and program descriptions from the 2022 Annual Publication of Assistance Listings were used to create a list of assistance listings with the sole purpose of educating, training, or retaining the health workforce. This list was used to tag all health workforce transactions from the USASpending download.

Using these variables, the dataset was reduced to just under 1,500 transactions representing health workforce funding for entities in California. Then, a number of steps were taken to further clean, sort, and manage the dataset, including:

1) Manually checking ambiguous transactions to ensure that the sole purpose of the funded program or project was to educate, train, or retain the health workforce. This was done by reviewing USASpending project descriptions.
2) Excluding transactions that were funded with emergency relief dollars, such as funding from the American Rescue Plan Act. This was possible using the "Disaster Emergency Fund Code" variable.[9] Total estimates do not include any emergency relief dollars.
3) Removing negative transactions ("deobligations") for organizations related to prior years' awards and removing negative transactions to individuals when it was not possible to track when the initial award was made.

This narrowed the list to nearly 1,100 transactions. The final data-cleaning steps included:

1) Sorting transactions by health field using the Annual Publication of Assistance Listings description or, when necessary, the description of the funded program or project available from USASpending.
2) Sorting transactions into program types, such as scholarship or professional development programs. This was done using the Annual Publication of Assistance Listings description or, when necessary, the description of the funded program or project available from USASpending.

The final step of the USASpending analysis involved summing the "Federal Action Obligation" value, which provides the dollar amount of individual transactions.

This analysis did not include sub-awards due to documented challenges with incomplete and inaccurate data, nor did it include federal funds for contracts, such as those made to maintain public lands or create military equipment, or loans, such as those provided to small businesses.[10]

Finally, because this analysis focused only on funded programs or projects with the sole goal of educating, training, or retaining the health workforce, those with goals in addition to supporting the health workforce were excluded. For example, one project provided professional development opportunities for emergency responders to distribute Narcan using culturally specific opioid response tactics *and* worked to enhance data collection processes. Because this project was not *solely* related to training emergency responders, it was not tagged as a health workforce transaction. Due to this method, USASpending figures should be considered an *underestimate* of federal funds for the health workforce in California.

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.

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 Kristin Schumacher, *The Role of State and Federal Funding for Graduate Medical Education in California* (PDF), California Health Care Foundation, October 2024.

2 "Cost Reports," US Centers for Medicare & Medicaid Services (CMS), last modified April 18, 2025.

3 Frequently Asked Questions" (PDF), CMS, accessed June 22, 2025.

4 The identification number for this FOIA request is 25-09056-F.

5 "Federal Spending Guide," USASpending, accessed June 11, 2025.

6 "Data Dictionary," USASpending, accessed February 7, 2025.

7 "Data Dictionary."

8 "Assistance Listings," US System for Award Management (SAM), accessed March 18, 2024.

9 "Data Dictionary," USASpending.

10 "Grants Management: Recent Guidance Could Enhance Subaward Oversight," U.S. Government Accountability Office, March 26, 2025.