



Department of Health Care
Access and Information

**HEALTH WORKFORCE
RESEARCH DATA CENTER
ANNUAL REPORT TO THE LEGISLATURE
JANUARY 2024**



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“A healthier California where all receive equitable, affordable, and quality health care”

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Introduction

California Health and Safety Code [Section 128050](#) established the Health Workforce Research Data Center at the Department of Health Care Access and Information (HCAI) as the state's central source of health care workforce and education data. HCAI is responsible for the collection, analysis, and distribution of information on the educational and employment trends for health care occupations and geographic distribution across the state. The statute requires HCAI to produce an annual report to the legislature that:

- a) Identifies education and employment trends in the health care professions.
- b) Reports the current supply and demand for health care workers in California and gaps in the educational pipeline producing workers in specific occupations and geographic areas.
- c) Recommends state policy to address issues of health workforce shortage and distribution.
- d) Describes outcomes and effectiveness of the state's health workforce programs.

With the establishment of the Research Data Center in 2021 (Assembly Bill 133, Committee on Budget, 2021), HCAI began the work to collect the data necessary to provide comprehensive, timely, and accessible workforce information to ensure that state policies are as informed and effective as possible.

While new data collection efforts are in progress, this report focuses on building the baseline for health professions data by summarizing the data collected and providing general information about the professions for which data are already available. As HCAI collects more data, reports will include more state policy recommendations and analyses of program outcomes and effectiveness. The Next Steps section of this report summarizes HCAI's ongoing data collection efforts and reporting plans.

There are more than a million licensed health professionals in California across more than 50 professions, each playing a role in delivering health care to Californians. While basic supply data are available for many of these professions in the form of license counts, supply data have lacked important detail necessary for a comprehensive understanding of the workforce (i.e., in-depth demographic details, detailed practice metrics, education information, etc.). HCAI's ongoing collaboration with the Department of Consumer Affairs (DCA) expanded the breadth and quality of licensure data and overhauled its supplemental workforce survey, which will provide high-quality, high-value data on topics like employment, education, demographics, and language fluency.

This report groups related professions into six reporting groups:

- **Allied Health:** Advanced Practice Pharmacists (APH), Audiologists (AU), Chiropractors (DC), Licensed Acupuncturists (AC), Doctors of Podiatric Medicine (DPM), Optometrists (OPT), Occupational Therapists (OT), Occupational Therapy Assistants (OTA), Respiratory Care Practitioners (RCP), Registered Pharmacists (RPH), Pharmacy Technicians (Phot), Physical Therapist Assistants (PTA), Physical Therapists (PT), Polysomnographic Technicians (PTN), Polysomnographic Technologists (PTL), Speech Pathologists (SP), and Speech-Language Pathology Assistants (SPA)
- **Behavioral Health:** Associate Clinical Social Workers (ACSW), Associate Marriage and Family Therapists (AMFT), Associate Professional Clinical Counselors (APCC), Licensed Clinical Social Workers (LCSW), Licensed Marriage and Family Therapists (LMFT), Psychologists (PSY), Licensed Professional Clinical Counselors (LPCC), Licensed Educational Psychologists (LEP), Psychiatric Mental Health Nurses (PMHN), Psychiatric Technicians (PST), and Registered Psychological Associates (RPA)

- **Medicine:** Naturopathic Doctors (ND), Osteopathic Physicians and Surgeons (DO), Physicians and Surgeons (MD), and Physician Assistants (PA)
- **Nursing:** Public Health Nurses (PHN), Registered Nurses (RN), and Licensed Vocational Nurses (LVN)
- **Advanced Practice Nursing:** Clinical Nurse Specialists (CNS), Nurse Anesthetists (NA), Nurse Midwives (NM), Nurse Practitioners (NP), and Licensed Midwives (LM)
- **Oral Health:** Dentists (DDS), Orthodontic Assistants (OA), Registered Dental Assistants (RDA), Registered Dental Assistants in Extended Functions (RDAEF), Registered Dental Hygienists (RDH), Registered Dental Hygienists Alternative Practice (RDHAP), and Registered Dental Hygienists Extended Function (RDHEF)

Professions in the Allied Health section were chosen from our surveyed license types in order to best match those assigned by the Health Resources and Services Administration’s (HRSA) Bureau of Health Workforce (BHW)¹.

The key findings section of this report highlights select figures within each topic; the appendices contain all figures for each profession group. Future reports will go into more detail about these professions and other health professions as data become available.

Data

The primary data source for this report is licensure data. Licensure data, which DCA collects as part of the administrative licensing process, enumerates every license within a given profession and is foundational to accurately describing the health workforce. Licensure data collected include each license’s status, issuance date, licensee’s public address of record, and date of birth. Survey data build upon the licensure data by adding demographic information about the licensee and detail about their past, present, and future work plans.

Since the establishment of the Research Data Center in 2021, HCAI has partnered with DCA to update the data it collects. Previously, HCAI received licensure and survey data for only a subset of licensing boards, and the workforce survey collected inconsistent data. In July 2022, HCAI began receiving more comprehensive licensure reports from every board and launched a modernized workforce survey administered as part of the electronic licensure renewal process that collects a standard set of information and maximizes response rates. The updated survey requires a response to every question but provides a “decline to state” option for all items. Business and Professions Code [section 502](#) prescribes the minimum information to be collected in the modernized survey. As part of the ongoing HCAI and DCA collaboration, HCAI receives monthly updates to both licensure and survey data.

Workforce Data

All licensure data presented in this report represent a snapshot of the active licensee population on September 1, 2023, collected by DCA. All survey data presented in this report represent data received from the [HCAI Health Workforce License Renewal Survey](#) as of September 1, 2023. Response rates from the renewal survey vary by profession, so HCAI utilizes a cell-based weighting methodology to

¹See HRSA’s website for more information on how they defined Allied Health: <https://bhw.hrsa.gov/data-research/projecting-health-workforce-supply-demand/technical-documentation/allied-health-other>

compensate for any disproportionate quantity of responses from a certain group. The [Technical Appendix](#) details the response rates and weighting methodology.

Education Data

This report incorporates education data from two distinct sources. Education pipeline data come from the Integrated Postsecondary Education Data System (IPEDS). This data is gathered by the National Center for Education Statistics (NCES). IPEDS gathers information from every college, university, and technical and vocational institution that participates in federal student financial aid programs. The completion of all IPEDS surveys is mandatory for institutions that participate, or are applicants for participation, in any federal student financial aid program (such as Pell grants and federal student loans) authorized by Title IV of the Higher Education Act of 1965, as amended (20 USC 1094, Section 487(a)(17) and 34 CFR 668.14(b)(19)). Metrics on initial degree location and residency location come from the HCAI Health Workforce License Renewal Survey as of September 1, 2023 (see above for further details).

Population Data

This report incorporates data about the general California population. This report uses county population projections from the California Department of Finance ([P-2A](#)) for the year 2023. For demographic and social characteristics, this report utilizes population estimates from the 2021 U.S. Census Bureau's American Community Survey 5-year estimates for race and ethnicity ([DP-05](#)) and for language spoken (DP-02).

Regions

HCAI analyzes data at multiple geographic levels of detail. Statewide numbers alone may mask significant geographic or demographic variation that exist within the state. For ease of comparison with other research, this report includes both statewide results and results for nine regions that align with other, similar research like the Healthforce Center at the University of California, San Francisco and the California Health Interview Survey from the University of California, Los Angeles. The [Technical Appendix](#) details the counties within each region.

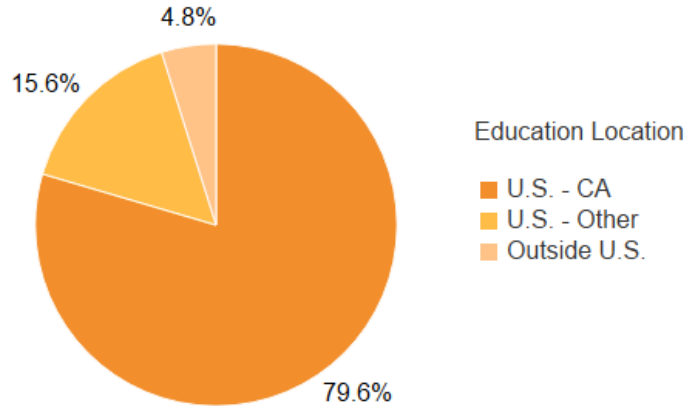
Key Findings

Education and Employment Trends

Key findings for Allied Health ([Figures A-1 through A-5](#))

- In the last 10 years, there have been no statistically significant changes in the Allied Health education pipeline.
- Over 95 percent of Allied Health professionals complete their initial education in the U.S., with nearly 80 percent receiving their initial qualifying degree within California (Figure A-2, right).
- Within Allied Health professionals with active licenses, most are actively working or seeking work (92.6 percent), while relatively few are not working/not seeking work (5.8 percent) or retired (1.6 percent).
- Health professionals reported how many average weekly work hours they spend on Direct Patient Care, Research, Training, Administration, and Other Activities. Survey data showed Allied Health professionals spend the highest number of hours per week on Patient Care (25.9 hours), and the least amount of time per week on Research (3.7 hours). Further key findings in this area will highlight the highest and lowest categories indicated.

Figure A-2: Education Location: Allied Health

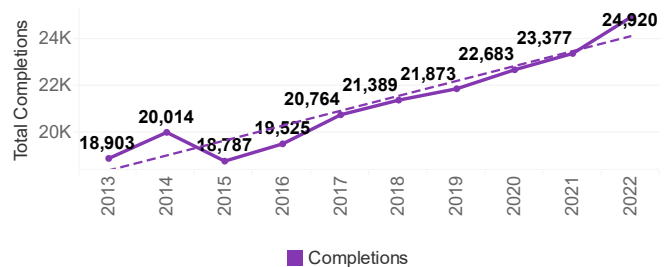
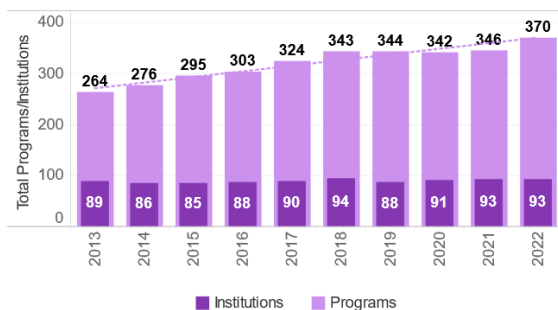


Within Allied Health professionals, the three license types with the highest rates of planned retirement in the next five years are Doctors of Podiatric Medicine (23.4 percent), Audiologists (22.2 percent), and Chiropractors (20.6 percent).

Key findings for Behavioral Health ([Figures B-1 through B5](#))

- There has been a significant increase (31.8 percent) in the number of individuals completing Behavioral Health educational and training programs in California over the last 10 years (Figure B-1, below).
- Within California's Behavioral Health professionals, 99.7 percent complete their education in the U.S., with nearly 90 percent receiving their initial qualifying degree within California.

Figure B-1: Education Pipeline: Behavioral Health

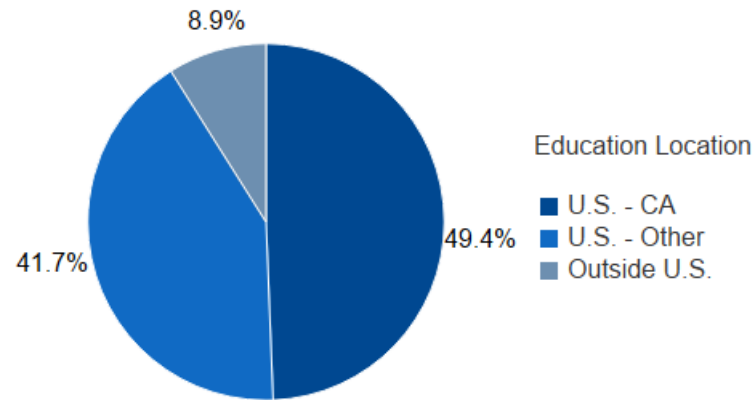


- Within statewide Behavioral Health professionals, the three license types with the highest rates of planned retirement in the next five years are Psychiatric Mental Health Nurses (69.5 percent), Psychologists (20.8 percent), and Licensed Educational Psychologists (20.1 percent).

Key findings for Medicine ([Figures C-1 through C-6](#))

- There has been a significant increase in the number of institutions providing degrees in medicine (127.3 percent), the number of programs those institutions provide (100 percent), as well as the number of individuals graduating with medical degrees (38.8 percent) in California over the last 10 years.
- Over 90 percent of California’s Medicine professionals complete their education in the U.S., but despite recent expansions in health profession education in California, less than 50 percent receive their initial qualifying degree within California (Figure C-2, right).
- Nearly 99 percent of Medicine professionals who complete a residency (“Osteopathic Physicians and Surgeons” and “Physician and Surgeons”) completed their residency in the U.S., but less than 60 percent completed their residency within California.
- Within Medicine professionals with active licenses, most are actively working or seeking work (94.0 percent), while relatively few are not working/not seeking work (1.8 percent) or retired (4.1 percent).

[Figure C-2: Education Location: Medicine](#)



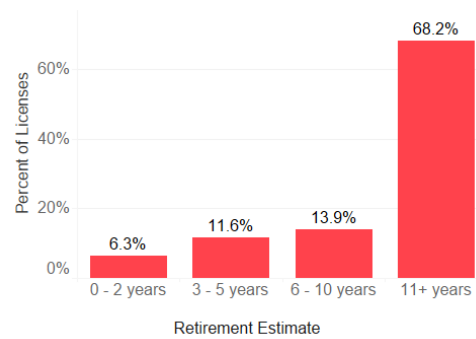
- Medicine professionals spend the highest number of hours per week on Patient Care (29.7 hours), and the least amount of time per week on Research (3.0 hours).
- Nearly 40 percent of Physician and Surgeons estimate retiring by 2033.

Key findings for Nursing ([Figures D-1 through D-5](#))

- There has been a significant increase (13.1 percent) in the number of individuals completing Nursing programs in California over the last 10 years.
- Nearly 90 percent of Nursing professionals complete their education in the U.S., but only 75.2 percent receive their initial qualifying degree within California.
- Within Nursing professionals with active licenses, most are actively working or seeking work (92.3 percent), while relatively few are not working/not seeking work (3.5 percent) or retired (4.2 percent).

- Nursing professionals spend the highest number of hours per week on Patient Care (26.7 hours), and the least amount of time per week on Research (3.7 hours).
- Nearly 18 percent of all Nursing professionals estimate retiring in the next five years (Figure D-5, right).

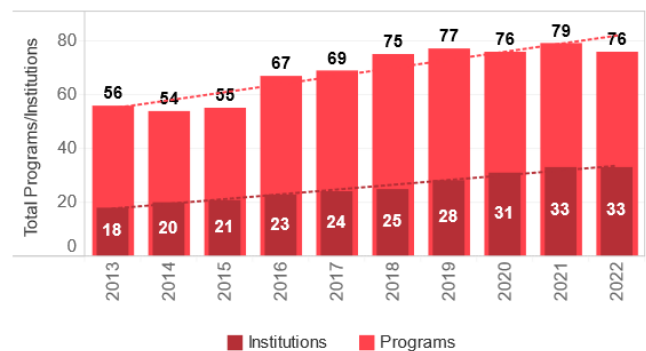
[Figure D-5: Retirement Estimates: Nursing](#)



Key findings for Advanced Practice Nursing ([Figures E-1 through E-5](#))

- There has been a significant increase in the number of institutions providing degrees in Advanced Practice Nursing (83.3 percent), the number of programs those institutions provide (35.7 percent), as well as the number of individuals graduating with degrees in Advanced Practice Nursing (142.7 percent) in California over the last 10 years (Figure E-1, right).
- Nearly 95 percent of Advanced Practice Nursing professionals complete their education in the U.S., but only 68.1 percent receive their initial qualifying degree within California.
- Within Advanced Practice Nursing professionals with active licenses, most are actively working or seeking work (94.6 percent), while relatively few are not working/not seeking work (2.3 percent) or retired (3.1 percent).
- Advanced Practice Nursing professionals spend the highest number of hours per week on Patient Care (29.0 hours), and the least amount of time per week on Research (3.7 hours).

[Figure E-1: Education Pipeline: Advanced Practice Nursing](#)



- Within Nursing professionals, 50.8 percent of Clinical Nurse Specialists and 43.0 percent of Nurse Midwives estimate retiring by 2033.

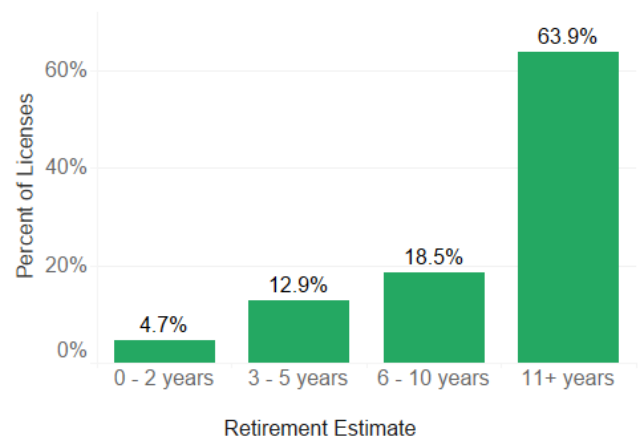
Key findings for Oral Health ([Figures F-1 through F-6](#))

- There has been a significant decrease (29.7 percent) in the number of individuals completing Oral Health programs in California over the last 10 years.
- Nearly 95 percent of Oral Health professionals complete their education in the U.S., with over 82 percent receiving their initial qualifying degree within California.
- Within Oral Health professionals with active licenses, most are actively working or seeking work (95.8 percent), while relatively few are not working/not seeking work (3.2 percent) or retired (1.0 percent).
- Just over 90 percent of Oral Health professionals completed their residency in

the U.S., but less than 70 percent completed their residency within California.

- Oral Health professionals spend the highest number of hours per week on Patient Care (29.4 hours), and the least amount of time per week on Research (3.2 hours).
- Over 40 percent of Dentists and RDHs in Alternative Practice estimate retiring by 2033 (Figure F-6, right).

Figure F-6: Retirement Estimates: Oral Health



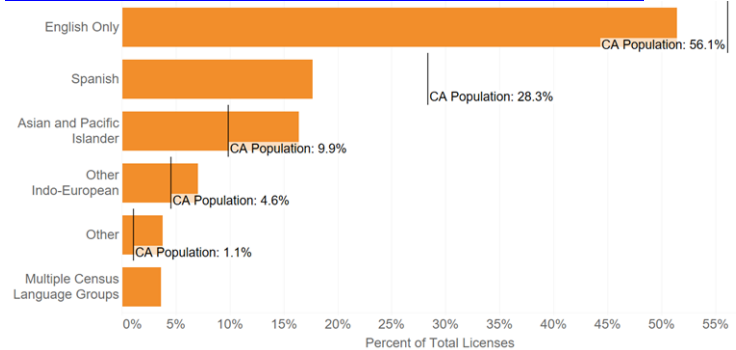
Demographics

Key findings for Allied Health ([Figures A-6 through A-8](#))

- Approximately 12 percent of the Allied Health workforce is 60 years old and over.
- Black and Hispanic/Latine/x populations are underrepresented in 16 out of the 18 Allied Health professions. Asian populations are represented in higher rates, relative to their percentage of the population, in 16 out of the 18 Allied Health professions. White populations are represented in higher rates, relative to their percentage of the population, in 8 out of the 18 Allied Health professions.

It should be noted rates of representation may be higher when compared to the percentage of the population, overall shortages in allied health and other professions may mean the overall number of professionals from any community is still inadequate to meet the needs of Californians. Also, the aggregation of many subpopulations in the Asian grouping may mask under representation of some Asian subgroups.

Figure A-8: Languages Spoken: Allied Health

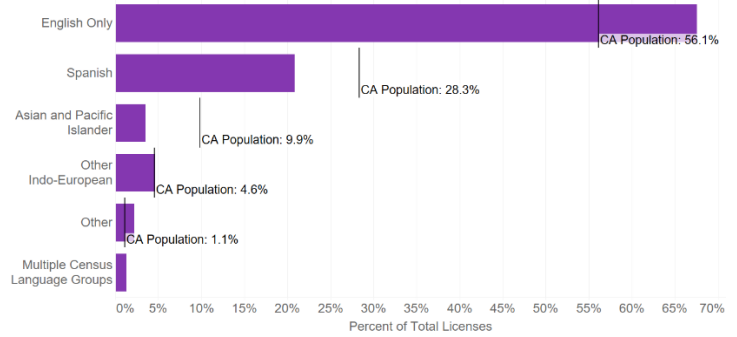


- Spanish-speaking populations are underrepresented in 16 out of the 18 Allied Health license types (Figure A-8, above).

Key findings for Behavioral Health ([Figures B-6 through B-8](#))

- Approximately 21 percent of the Behavioral Health workforce is 60 years old and over.
- Asian populations are underrepresented in all ten Behavioral Health professions. Hispanic/Latine/x populations are underrepresented in nine out of the ten Behavioral Health professions.
- Populations who are fluent in Asian and Pacific Islander languages are underrepresented in all ten Behavioral Health license types. Spanish-speaking populations are underrepresented in nine out of the ten Behavioral Health license types (Figure B-8, right).

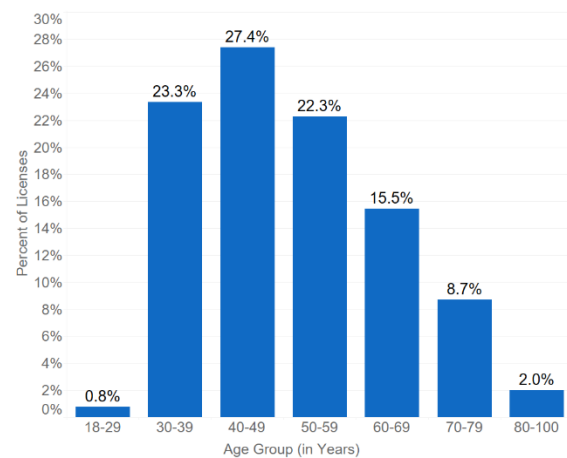
[Figure B-8: Languages Spoken: Behavioral Health](#)



Key findings for Medicine ([Figures C-7 through C-9](#))

- Approximately 26 percent of the Medicine workforce is 60 years old and over (Figure C-7, right).
- Black and Hispanic/Latine/x populations are underrepresented in all four Medicine professions (“Naturopathic Doctor”, Osteopathic Physician and Surgeon”, “Physician and Surgeon”, and “Physician Assistant”).
- Spanish-speaking populations are underrepresented in all four Medicine license types.

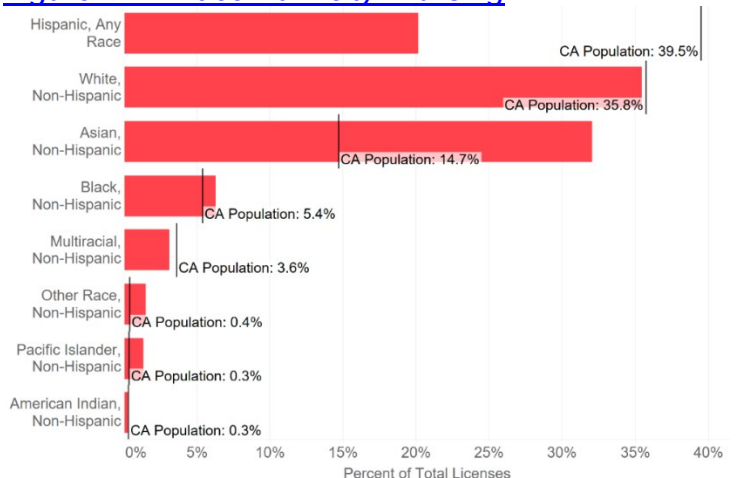
[Figure C-7: Age Distribution: Medicine](#)



Key findings for Nursing ([Figures D-6 through D-8](#))

- Approximately 20 percent of the Nursing workforce is 60 years old and over.
- Hispanic/Latine/x populations are underrepresented in all three Nursing professions (Public Health Nurses, Registered Nurses, and Vocational Nurses). White populations are underrepresented among Vocational Nurses (Figure D-7, right).
- Spanish-speaking populations are underrepresented in all three Nursing license types.

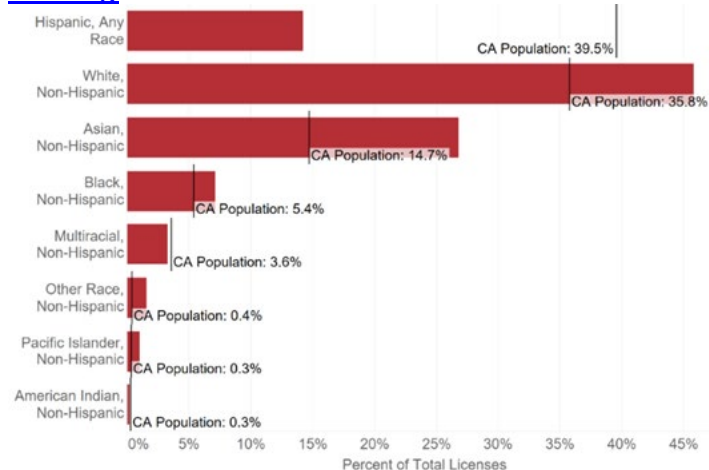
[Figure D-7: Race/Ethnicity: Nursing](#)



Key findings for Advanced Practice Nursing ([Figures E-6 through E-8](#))

- Approximately 19 percent of the Advanced Practice Nursing workforce is 60 years old and over.
- Hispanic/Latine/x populations are underrepresented in all five Advanced Practice Nursing professions. Asian populations are underrepresented among two out of the five Advanced Practice Nursing professions.
- Spanish-speaking populations are underrepresented in four out of the five Advanced Practice Nursing license types.

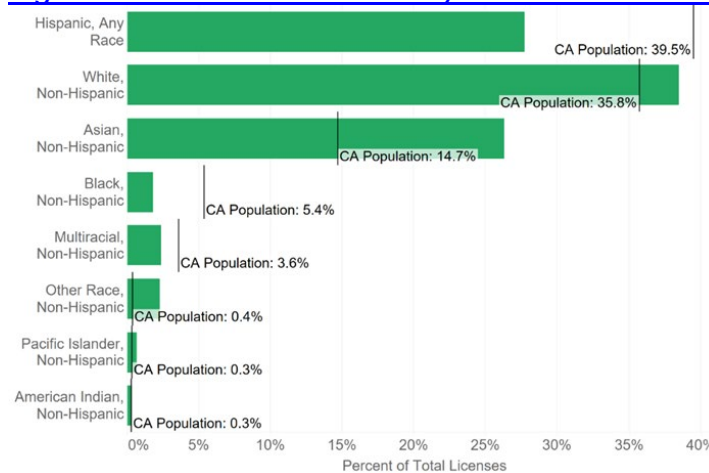
[Figure E-7: Race/Ethnicity: Advanced Practice Nursing](#)



Key findings for Oral Health ([Figures F-7 through F-9](#))

- Approximately 20 percent of the Oral Health workforce is 60 years old and over.
- Black populations are underrepresented in all seven Oral Health professions. Hispanic/Latine/x populations are underrepresented in four out of the seven Oral Health professions (Figure F-8, right).
- Spanish-speaking populations are underrepresented in four out of the seven Oral Health license types.

[Figure F-8: Race/Ethnicity: Oral Health](#)

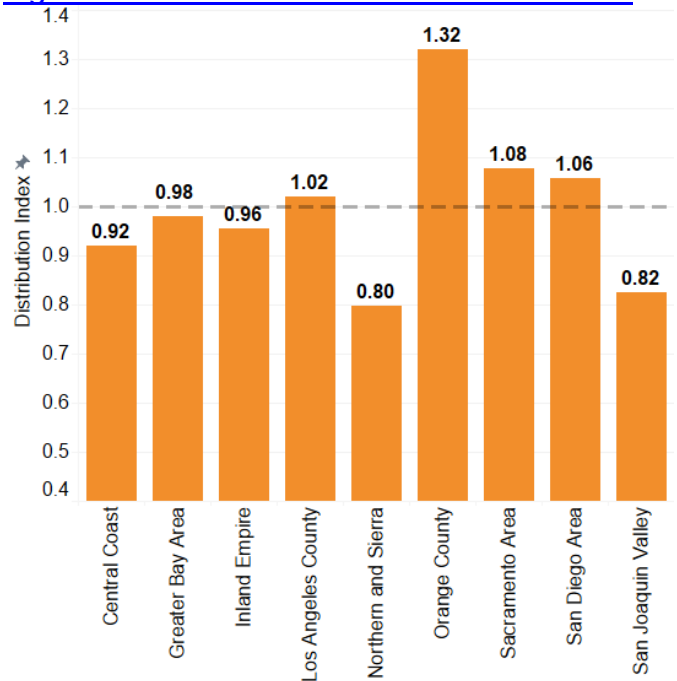


Statewide Workforce Availability and Distribution

Key findings for Allied Health ([Figures A-9 through A-12](#))

- Pharmacy Technicians are the largest workforce in the Allied Health category, representing just over 26 percent of active licenses.
- On average, there were 1,056 new Allied Health licenses added per month from September 2022 to September 2023.
- The San Joaquin Valley and Northern and Sierra Regions have the lowest shares of health professionals compared with their share of the state’s population across all Allied Health license types (Figure A-11, right).
- All Allied Health professions are expected to have an increase in active licenses in the workforce with the exceptions of Occupational Therapists, Occupational Therapy Assistants, and Pharmacy Technicians.

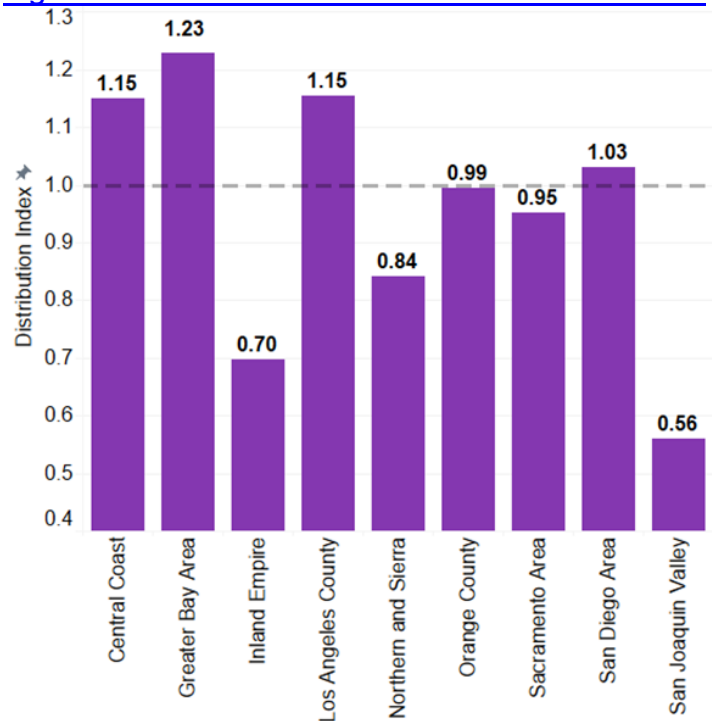
[Figure A-11: Distribution Index: Allied Health](#)



Key Findings for Behavioral Health ([Figures B-9 through B-12](#))

- Licensed Marriage and Family Therapists are the largest workforce in Behavioral Health, representing 33 percent of active Behavioral Health licenses.
- On average, there were 1,040 new licenses added per month from September 2022-September 2023.
- The San Joaquin Valley Region has a smaller share of all Behavioral Health providers compared with its share of the state population (Figure B-11, right). In addition, the Inland Empire region also has a notable disparity in the distribution of behavioral health providers.
- All professions within Behavioral Health are expected to have an increase in active licenses in the workforce with the exception of Registered Psychological Associates.

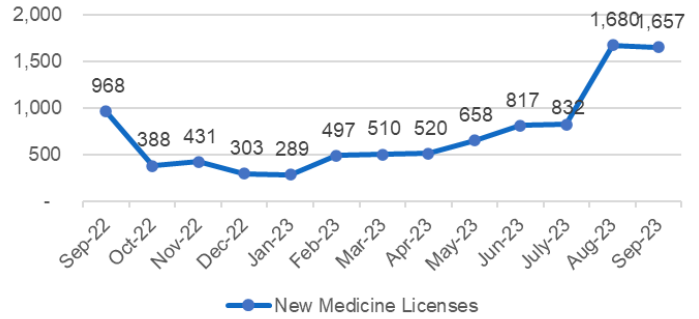
[Figure B-11: Distribution Index: Behavioral Health](#)



Key Findings for Medicine ([Figures C-10 through C-13](#))

- Physicians are the second largest workforce highlighted in this report, with 126,399 total in-state licenses in active status.
- On average, there were 735 new Medicine licenses added per month from September 2022-September 2023 (Figure C-11, right).
- Medicine licenses are fairly well distributed across the state, although there is an extremely high ratio of Naturopathic Doctors in the San Diego Area.
- All professions within Medicine are expected to have an increase in active licenses in the workforce with the exception of Osteopathic Physicians and Surgeons

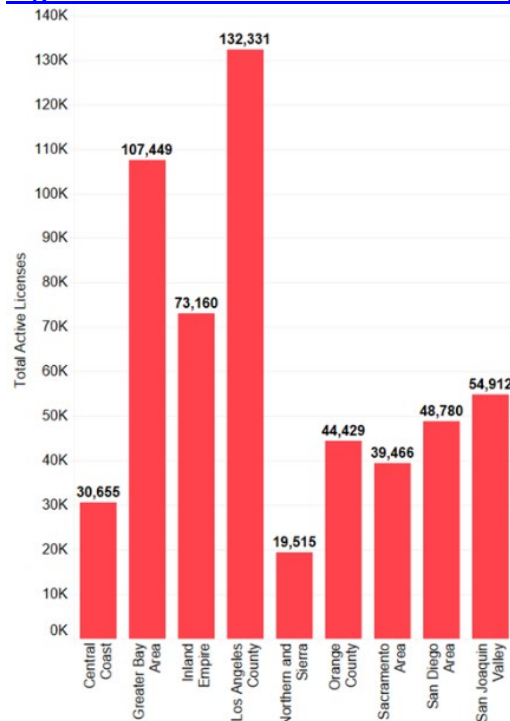
[Figure C-11: New Licenses: Medicine](#)



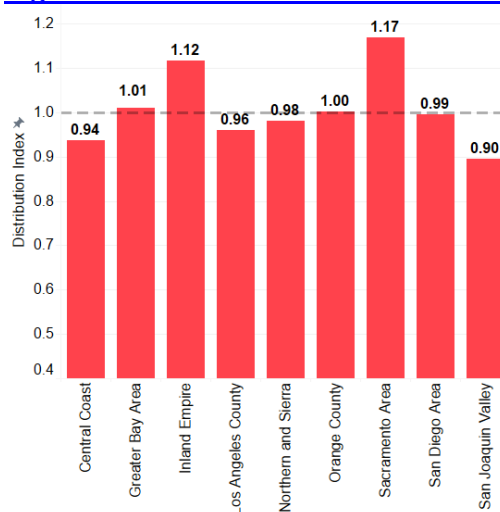
Key Findings for Nursing ([Figure D-9 through D-12](#))

- Registered Nurses are the largest workforce highlighted in this report with 407,401 active licenses, representing 74 percent of the nursing workforce (Figure D-9, below).
- On average, there were 2,649 new Nursing licenses added per month from September 2022-September 2023.
- Overall, nurses are well distributed across all regions in the state (Figure D-11, below).
- All professions within Nursing are expected to have an increase in active licenses in the workforce with the exceptions of Public Health Nurses and Vocational Nurses.

[Figure D-9: Active Licenses: Nursing](#)



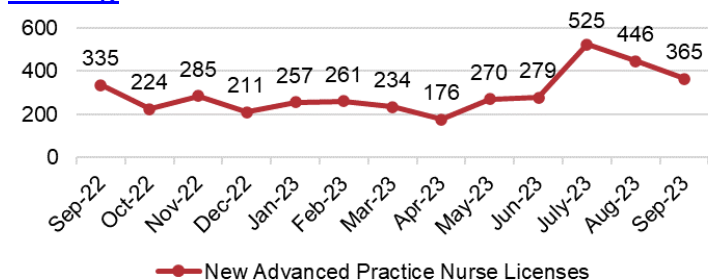
[Figure D-11: Distribution Index: Nursing](#)



Key Findings for Advanced Practice Nursing ([Figures E-9 through E-12](#))

- Nurse Practitioners are the largest Advanced Practice Nursing group, representing nearly 82 percent of active AP Nursing licenses.
- On average, there were 298 new Advanced Practice Nursing licenses added per month from September 2022-September 2023 (Figure E-10, right).
- Though rates of Advanced Practice Nursing licenses are well distributed across the state overall, Licensed Midwives are highly concentrated relative to the population in two of the nine regions (Central Coast and Northern and Sierra).
- All professions within Advanced Practice Nursing are expected to have a decrease in active licenses in the workforce with the exception of Nurse Anesthetist.

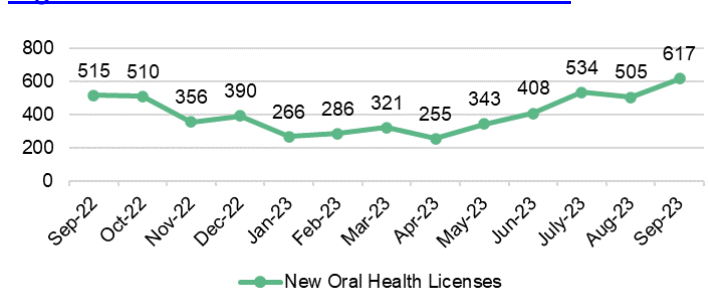
[Figure E-10: New Licenses: Advanced Practice Nursing](#)



Key Findings for Oral Health ([Figures F-10 through F-13](#))

- Dentists are the largest Oral Health group, representing nearly 40 percent of active Oral Health licenses.
- On average, there were 408 new Oral Health licenses added per month from September 2022-September 2023 (Figure F-11, right).
- Overall, Oral Health licenses are well distributed throughout the state based on population.
- All professions within Oral Health are expected to have an increase in active licenses in the workforce except Registered Dental Hygienists and RDA in Extended Functions.

[Figure F-11: New Licenses: Oral Health](#)



HCAI Programs

Shortage Areas

HCAI’s mission is to help expand equitable access to quality, affordable health care for all Californians. HCAI utilizes workforce, health care, population, and payer data to implement workforce education and training solutions to define and improve:

- Access to care in geographic shortage areas,
- Access to care for Medi-Cal members and uninsured Californians, and
- Capacity of California's health workforce to deliver culturally concordant care and quality care.

Table 1: Areas of Unmet Need

Types of Areas of Unmet Need ¹	Area of Unmet Need Definition	Area Subtypes
Medical Service Study Area (MSSA)	Sub-city and sub-county geographical units used to organize and display population, demographic, and physician data.	Urban
		Rural
		Frontier ²
Health Professional Shortage Area (HPSA)	Designation based upon the evaluation of criteria established by the federal Health Resources and Services Administration (HRSA) Bureau of Health Workforce	Primary Care HPSA (Geographic) ³
		Primary Care HPSA (Population) ⁴
		Mental Health (Geographic)
		Mental Health (Population)
Facility HPSA Designation ¹	Facilities experiencing a shortage of health care professionals.	Other Facility (OFAC)
		Correctional Facility
		State/County Mental Hospitals
		Automatic Facility HPSAs
Registered Nurse Shortage Area (RNSA)	Measures the degree of shortage for Registered Nurses as high, medium, low severity areas	
Primary Care Shortage Area (PCSA)	Counts the number of Family Nurse Practitioners and Physician Assistants in a service area. Overlaps MSSA shapes.	
Substance Use Disorder (SUD) Area	Area identified as having an overconsumption of drugs and/or substance abuse within the population	

Note. ¹See the Health Resources and Services Administration’s [“What is a Shortage Designation?”](#) page for more information.

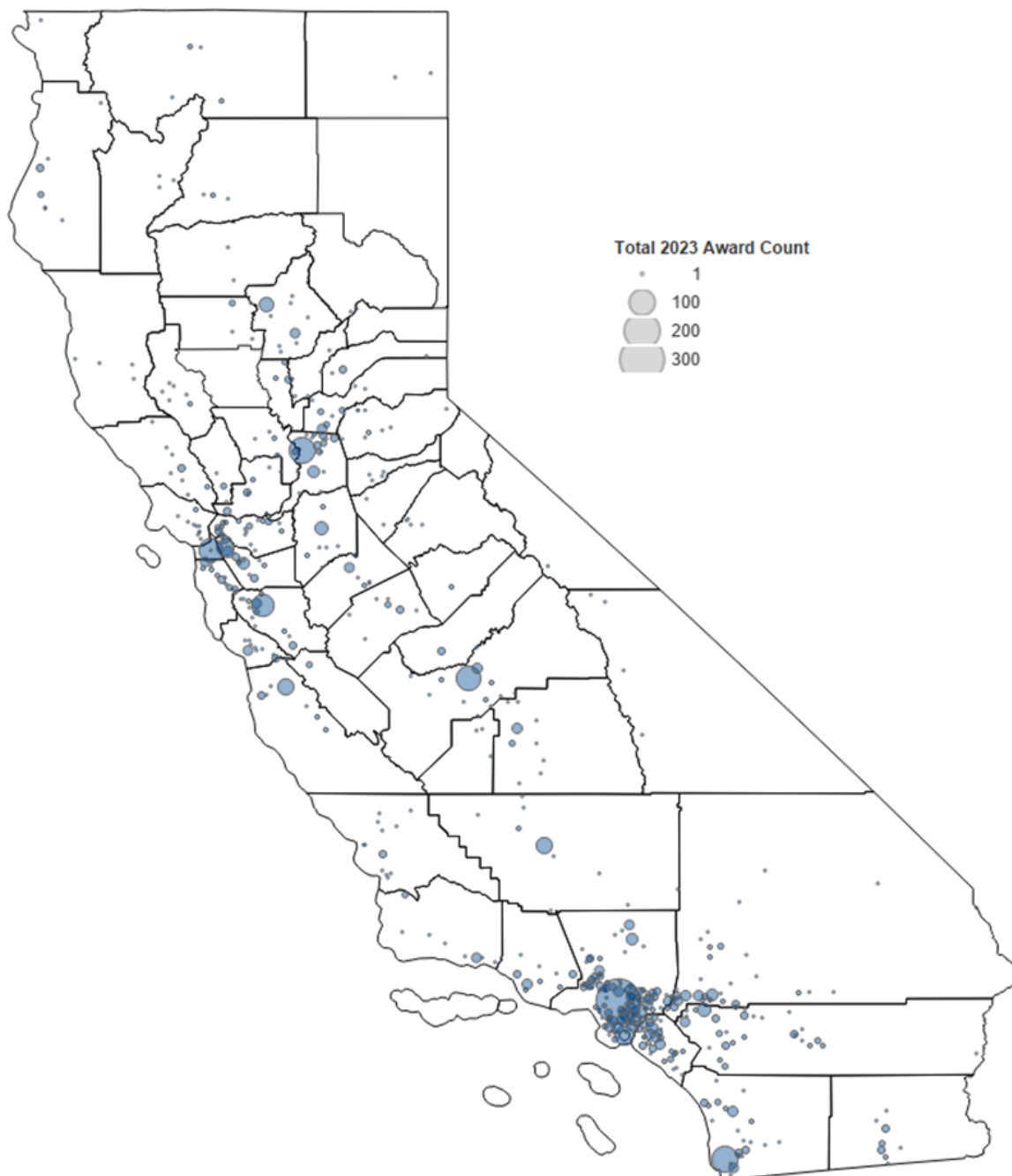
²The Frontier label has been discontinued and will not be used in future MSSA designations. ³Geographic HPSAs indicate a shortage of providers for an entire group of people within a defined geographic area. ⁴Population HPSAs indicate a shortage of providers for a specific group of people within a defined geographic area.

Statewide Program Awards

HCAI programs increase workforce diversity and access to healthcare in underserved areas throughout California. Programs provide financial incentives to encourage underrepresented groups to pursue healthcare careers, and individuals and organizations to provide services in areas of unmet need. We achieve this by providing individuals with financial aid in the form of loan repayments, scholarships, and stipends, as well as overseeing organization-level grants to support training capacity/expansion, recruitment/retention, and/or training and placement.

Figure 1 illustrates the distribution of HCAI awards to both individuals and organizations across the state during 2023. Of the 58 counties, 55 counties (94.8 percent) contained at least one awardee.

Figure 1: 2023 Program Awards by City



Next Steps

HCAI will continue to work with key stakeholders to effectively implement the Health Workforce Research Data Center as California's central repository of health workforce data and build upon the baseline data displayed in this report. Over the next year, HCAI will focus on the following data for inclusion:

Collection of Health Workforce Data for Certified Professions

HCAI's licensee workforce survey went live in July of 2022. This survey provides every health workforce licensee in California the opportunity to submit key demographic and employment information when they electronically renew their licenses. These data will be critical for HCAI to gain a better understanding of the makeup of our health workforce over time. Additionally, HCAI has developed data sharing agreements with key stakeholders to obtain home and community-based services and substance use disorder workforce data. These data include several certified professions, along with important data on the uncertified workforce.

HCAI will also explore public and private education data options to better understand health program educational capacity, throughput, and demographics. The Integrated Postsecondary Education Data System (IPEDS) and collaboration with state higher education entities will be essential inputs for HCAI to leverage in future reports.

HCAI will integrate these data with additional data sources, such as supply-side data and HCAI's hospital utilization data, to gain key insights on the health workforce.

Throughout the year, HCAI will also publish a range of data products on HCAI's [health workforce data page](#) and the California Health and Human Services Agency's [Open Data Portal](#), ranging from one-page infographics, to interactive dashboards, and minimally processed aggregate data. We also publish 'data stories' and visualizations, intended to transform our data into information with context to make the data more useful and meaningful. For examples of these visualizations, see HCAI's [Featured Releases Page](#).

Additionally, HCAI is in the process of developing predictive models for supply and demand of the healthcare professionals across the state. These models will give HCAI a more accurate idea of where discrepancies are between workforce supply and demand and may be useful in influencing future funding decisions.

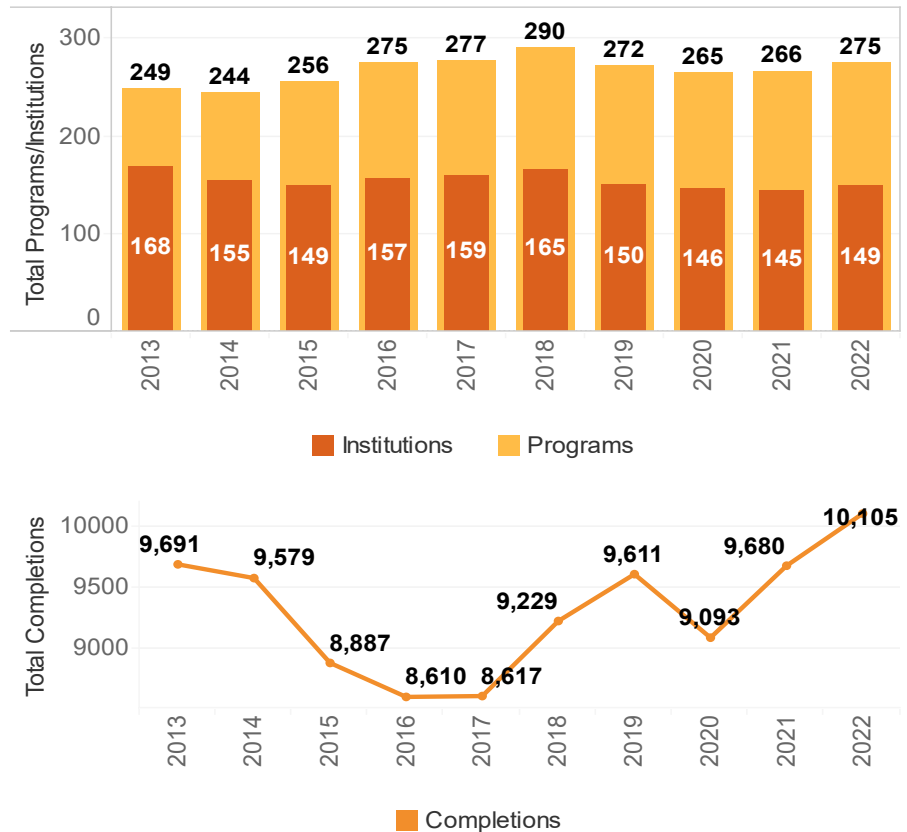
The development of the Research Data Center and its capacity to link sources and make data products will be an iterative process. As HCAI builds upon baseline data and collects additional data, the capability and data products will improve and expand.

Appendix A: Allied Health, All Figures

The professions included in the Allied Health section align with publications from the Health Resources and Services Administration’s (HRSA) Bureau of Health Workforce (BHW) and include the following: Advanced Practice Pharmacist, Audiologist, Chiropractor, Doctor Of Podiatric Medicine, Licensed Acupuncturist, Occupational Therapist, Occupational Therapy Assistant, Optometrist, Pharmacy Technician, Physical Therapist, Physical Therapist Assistant, Polysomnographic Technician, Polysomnographic Technologist, Psychiatric Technician, Registered Pharmacist, Respiratory Care Practitioner, Speech Pathologist, Speech-Language Pathology Assistant.

Figure A-1: Education Pipeline: Allied Health

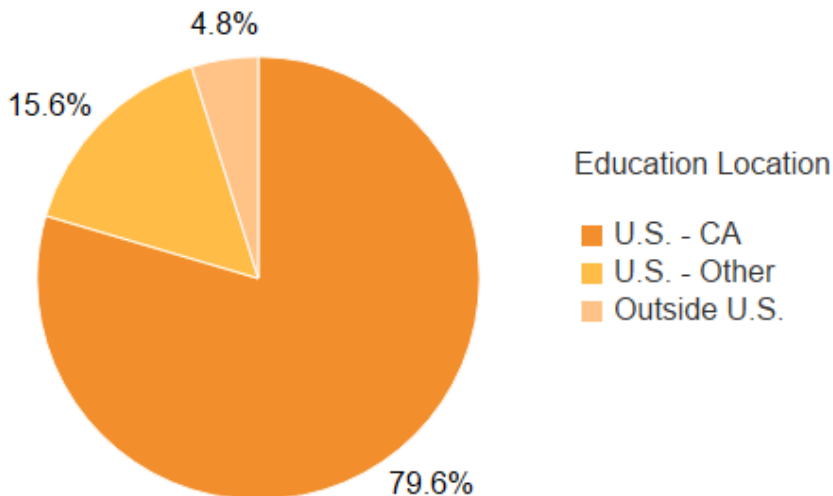
Over the last 10 years there have been no statistically significant changes in the Allied Health education pipeline. This group is the most diverse and represents the largest number of professions, so it is unsurprising no unified linear trend is present. Future work will aim to identify trends within each profession, as well as modeling future completion metrics to better understand potential workforce supply.



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Figure A-2: Education Location: Allied Health

Over 95 percent of Allied Health professionals completed their education in the U.S., with nearly 80 percent receiving their initial qualifying degree within California. Outliers include Audiologists with only 52 percent receiving their initial qualifying degree in California, and Polysomnographic Technicians and Physical Therapists with over 10 percent receiving their initial qualifying degree outside the U.S. Future work will aim to use this information in conjunction with education pipeline data to better understand potential workforce supply.

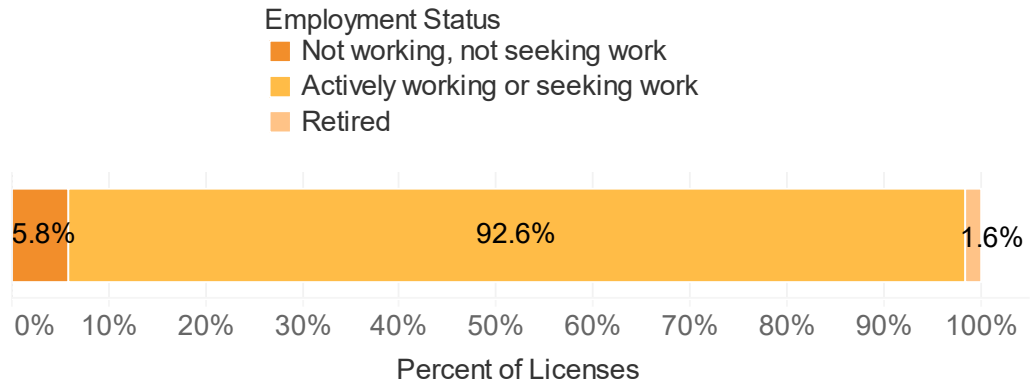


Active License in CA	U.S. - CA	U.S. - Other	Outside U.S.
Advanced Practice Pharmacist	74.5%	21.6%	3.9%
Audiologist	52.0%	47.2%	0.8%
Chiropractor	87.2%	12.2%	0.6%
Doctor of Podiatric Medicine	72.1%	27.7%	0.2%
Licensed Acupuncturist	90.3%	3.2%	6.5%
Occupational Therapist	71.8%	22.4%	5.7%
Occupational Therapy Assistant	85.8%	13.9%	0.3%
Optometrist	75.1%	24.4%	0.5%
Pharmacy Technician	91.8%	3.7%	4.5%
Physical Therapist	65.4%	24.1%	10.5%
Physical Therapist Assistant	80.7%	11.1%	8.2%
Polysomnographic Technician	74.3%	14.6%	11.0%
Polysomnographic Technologist	77.3%	13.6%	9.1%
Psychiatric Technician	96.9%	1.8%	1.3%
Registered Pharmacist	64.7%	27.5%	7.9%
Respiratory Care Practitioner	92.8%	6.7%	0.5%
Speech Pathologist	68.4%	28.9%	2.6%
Speech-Language Pathology Assistant	92.2%	7.4%	0.4%
All	79.6%	15.6%	4.8%

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Figure A-3: Employment Status: Allied Health

Over 90 percent of Allied Health professionals are actively working or seeking work. Outliers include Psychiatric Technicians with over 4 percent already retired and Polysomnographic Technicians, only 85.4 percent of whom are actively working or seeking work. These



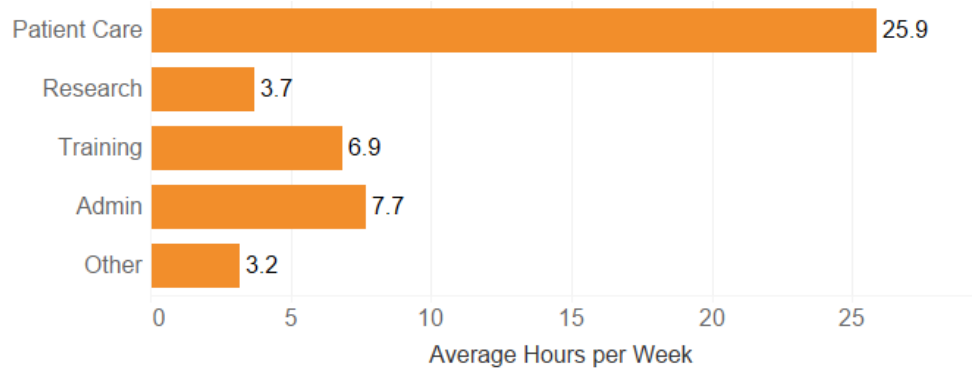
metrics will be used in the future to calculate more accurate supply data for each profession.

Active License in CA	Actively Working or Seeking Work	Not Working, Not Seeking Work	Retired
Advanced Practice Pharmacist	98.5%	1.0%	0.5%
Audiologist	95.4%	2.8%	1.8%
Chiropractor	93.2%	4.5%	2.2%
Doctor of Podiatric Medicine	97.4%	0.3%	2.3%
Licensed Acupuncturist	88.3%	8.9%	2.7%
Occupational Therapist	95.0%	4.1%	1.0%
Occupational Therapy Assistant	94.7%	5.0%	0.3%
Optometrist	97.0%	1.8%	1.2%
Pharmacy Technician	86.5%	13.0%	0.6%
Physical Therapist	96.0%	2.8%	1.2%
Physical Therapist Assistant	94.9%	4.4%	0.7%
Polysomnographic Technician	85.4%	14.6%	0.0%
Polysomnographic Technologist	92.4%	7.6%	0.0%
Psychiatric Technician	90.6%	5.1%	4.3%
Registered Pharmacist	93.3%	3.7%	3.0%
Respiratory Care Practitioner	96.4%	2.8%	0.7%
Speech Pathologist	93.0%	3.7%	3.3%
Speech-Language Pathology Assistant	91.1%	8.5%	0.4%
All	92.6%	5.8%	1.6%

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Figure A-4: Full-Time Equivalent Metrics: Allied Health

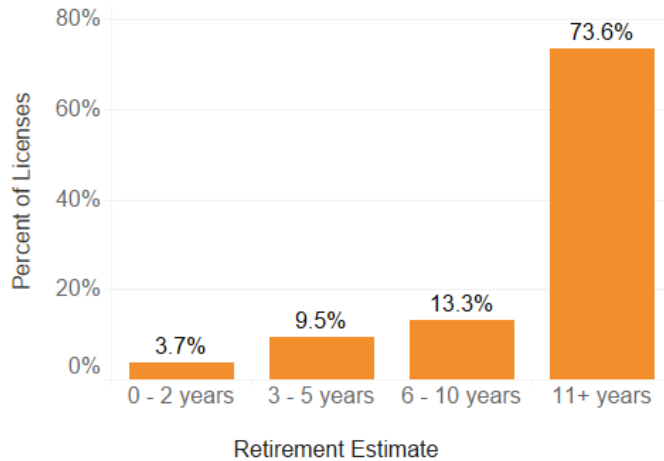
On average, Allied Health professionals spend the highest number of hours per week on Patient Care (25.9 hours), and the least amount of time per week on Research (3.7 hours). Outliers include Pharmacy Technicians with only 19.4 hours per week spent on Patient Care and Psychiatric Technicians with 32.6 hours spent on Patient Care. These metrics will be used in the future to calculate more accurate patient to provider ratios for each profession, which will lead to more accurate supply and demand modeling.



Active License in CA	Patient Care	Research	Training	Admin
Advanced Practice Pharmacist	24.1	4.0	7.8	12.5
Audiologist	28.1	1.6	5.4	8.0
Chiropractor	25.2	4.0	5.7	8.6
Doctor of Podiatric Medicine	31.0	2.3	5.6	7.8
Licensed Acupuncturist	23.4	5.5	5.5	7.4
Occupational Therapist	25.6	2.3	5.2	7.1
Occupational Therapy Assistant	30.0	4.0	7.3	5.3
Optometrist	30.4	1.6	3.5	6.4
Pharmacy Technician	19.4	6.0	9.1	9.5
Physical Therapist	28.4	1.7	4.9	6.7
Physical Therapist Assistant	31.4	3.1	6.6	4.0
Polysomnographic Technician	20.3	1.3	5.3	2.6
Polysomnographic Technologist	24.7	3.1	3.8	7.6
Psychiatric Technician	32.6	8.2	13.4	10.4
Registered Pharmacist	23.8	3.1	6.7	9.0
Respiratory Care Practitioner	30.7	3.9	8.3	5.6
Speech Pathologist	24.6	2.6	5.4	7.6
Speech-Language Pathology Assistant	27.5	4.7	5.9	6.0
All	25.9	3.7	6.9	7.7

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Figure A-5: Retirement Estimates: Allied Health

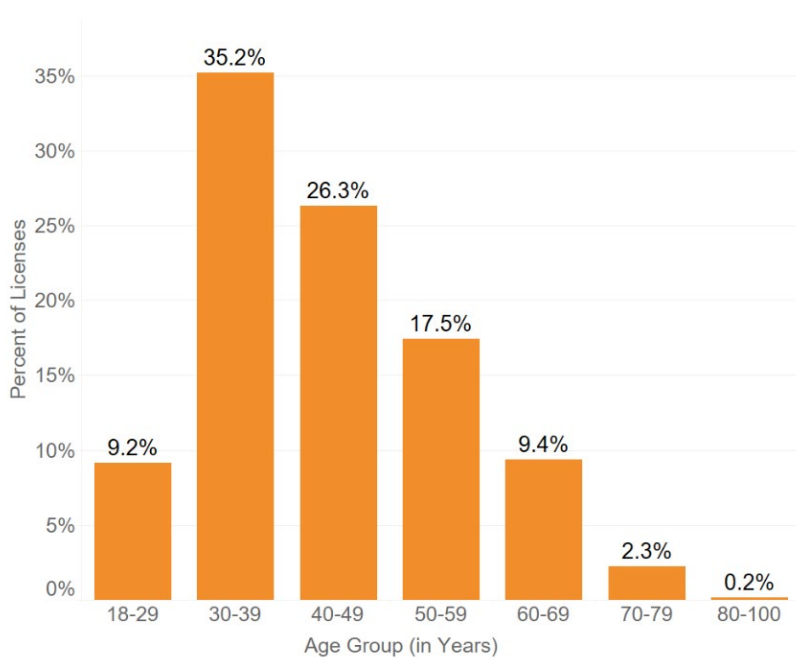


Among Allied Health professionals, 73.6 percent estimated retiring in 11 or more years, and only 3.7 percent estimated retiring in the next 2 years. Of note are Doctors of Podiatric Medicine, nearly 25 percent of whom estimated retiring in the next five years. These metrics will be crucial for calculating more accurate supply and demand models for each profession. In addition, this information may be useful in helping to identify which areas are in most need of funding to maintain the supply of Allied Health professionals across the state.

Active License in CA	0-2 Years	3-5 Years	6-10 Years	11+ Years
Advanced Practice Pharmacist	1.1%	3.2%	10.0%	85.7%
Audiologist	6.7%	15.5%	13.7%	64.1%
Chiropractor	6.5%	14.1%	20.7%	58.7%
Doctor of Podiatric Medicine	7.8%	15.6%	17.7%	59.0%
Licensed Acupuncturist	3.9%	13.0%	21.6%	61.5%
Occupational Therapist	3.4%	8.3%	12.4%	75.9%
Occupational Therapy Assistant	1.6%	7.9%	11.4%	79.0%
Optometrist	5.7%	13.3%	16.8%	64.2%
Pharmacy Technician	2.0%	5.8%	10.4%	81.9%
Physical Therapist	4.1%	9.8%	14.5%	71.5%
Physical Therapist Assistant	3.4%	8.5%	13.4%	74.7%
Polysomnographic Technician	0.0%	0.0%	7.3%	92.7%
Polysomnographic Technologist	1.6%	8.4%	10.8%	79.3%
Psychiatric Technician	6.0%	14.4%	17.4%	62.2%
Registered Pharmacist	3.8%	10.7%	12.5%	73.0%
Respiratory Care Practitioner	3.7%	8.9%	12.4%	75.0%
Speech Pathologist	4.2%	10.2%	11.6%	74.1%
Speech-Language Pathology Assistant	1.3%	3.5%	6.3%	88.9%
All	3.7%	9.5%	13.3%	73.6%

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Figure A-6: Age Distribution: Allied Health

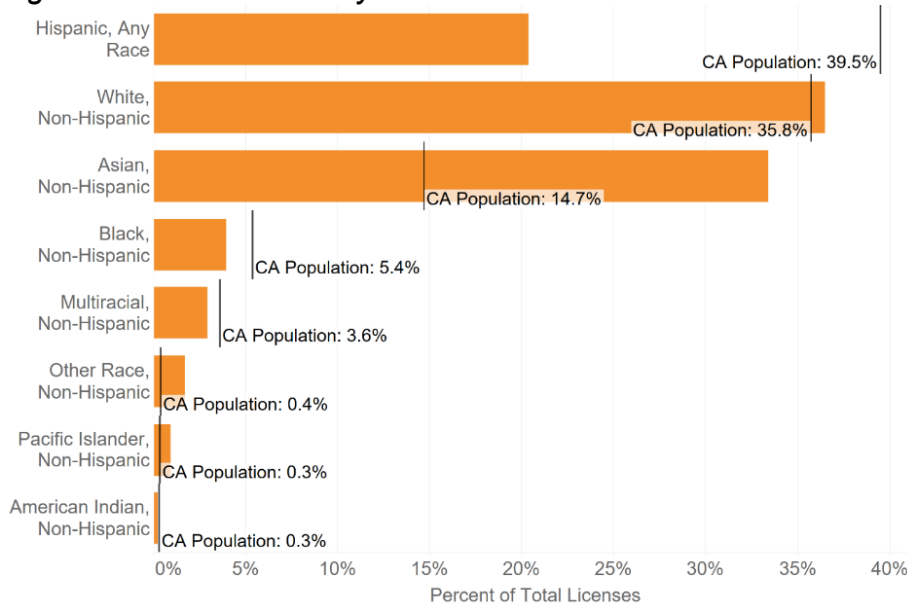


Overall, 11.9 percent of Allied Health professionals are 60 years old and over. Around 31 percent of Doctors of Podiatric Medicine, 31 percent of Licensed Acupuncturists, 23 percent of Chiropractors, 18 percent of Audiologists, 16 percent of Psychiatric Technicians, 12 percent of Speech Pathologists, 12 percent of Physical Therapists, 12 percent of Occupational Therapists, 11 percent of Respiratory Care Practitioners, 11 percent of Physical Therapist Assistants, 9 percent of Occupational Therapy Assistants, 9 percent of Registered Pharmacists, 6 percent of Polysomnographic Technologists, 5 percent of Advanced Practice Pharmacists, 5 percent of Pharmacy Technicians, and 4 percent of Speech-Language Pathology Assistants are 60 years and older.

Active Licenses in CA	18-29	30-39	40-49	50-59	60-69	70-79	80-100
Advanced Practice Pharmacist	2.3%	47.7%	34.2%	11.2%	4.1%	0.5%	N/A
Audiologist	6.5%	30.0%	25.3%	20.1%	13.9%	4.0%	0.1%
Chiropractor	3.5%	23.4%	23.8%	26.4%	17.0%	5.5%	0.3%
Doctor of Podiatric Medicine	N/A	22.5%	25.0%	21.5%	18.7%	11.2%	1.2%
Licensed Acupuncturist	0.4%	13.3%	27.1%	28.2%	21.3%	8.8%	1.0%
Occupational Therapist	8.2%	37.9%	25.3%	17.1%	9.5%	2.0%	0.1%
Occupational Therapy Assistant	10.0%	36.8%	26.0%	18.1%	7.9%	1.2%	N/A
Optometrist	2.4%	29.2%	25.6%	19.8%	15.0%	6.9%	1.0%
Pharmacy Technician	20.3%	38.5%	24.4%	12.3%	4.1%	0.4%	N/A
Physical Therapist	5.5%	35.2%	27.7%	19.5%	10.1%	1.8%	0.1%
Physical Therapist Assistant	7.8%	37.3%	24.6%	19.3%	10.2%	0.7%	<0.1%
Polysomnographic Technician	29.6%	55.6%	14.8%	N/A	N/A	N/A	N/A
Polysomnographic Technologist	3.0%	28.8%	39.4%	22.7%	4.5%	1.5%	N/A
Psychiatric Technician	6.2%	27.8%	28.4%	21.8%	13.6%	2.1%	0.1%
Registered Pharmacist	5.4%	42.8%	27.8%	15.2%	6.8%	1.8%	0.2%
Respiratory Care Practitioner	7.7%	33.5%	28.6%	18.8%	10.2%	1.2%	<0.1%
Speech Pathologist	7.8%	37.9%	27.0%	15.2%	9.0%	2.9%	0.3%
Speech-Language Pathology Assistant	27.3%	42.5%	17.5%	8.8%	3.7%	0.2%	N/A
All	9.2%	35.2%	26.3%	17.5%	9.4%	2.3%	0.2%

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Figure A-7: Race/Ethnicity: Allied Health



Hispanic/Latine/x populations are underrepresented overall and in 16 out of the 18 Allied Health professions. White populations are represented higher overall, relative to their percentages of the population, but are underrepresented in ten out of the 18 Allied Health license types. Asian populations are represented higher overall, relative to their percentages of the population, but are underrepresented among Speech Pathologists and Speech-Language Pathology Assistants. Black populations are underrepresented overall and in 16 out of the 18 Allied Health license types.

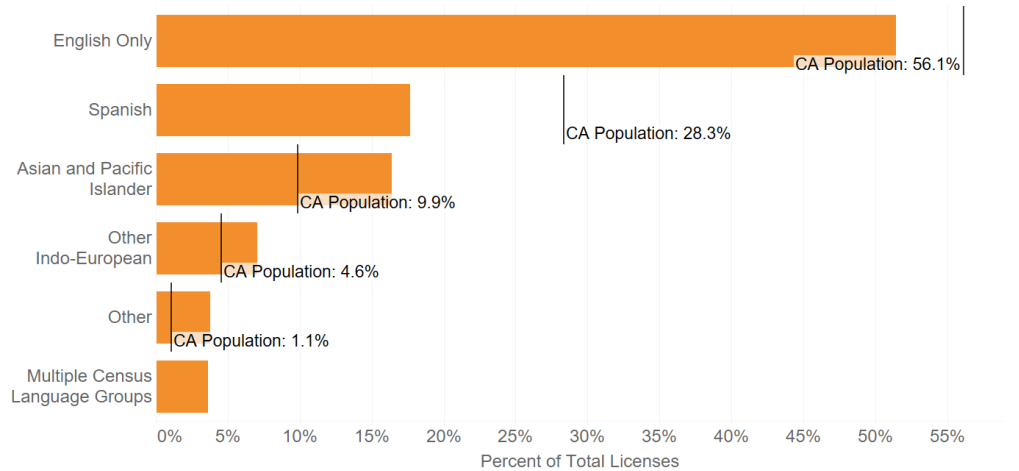
Active License in CA	American Indian, NH	Asian, NH	Black, NH	Hispanic/Latine/x	Multiracial, NH	Pacific Islander, NH	White, NH	Other Race, NH
Advanced Practice Pharmacist	0.4%	60.0%	2.3%	2.6%	2.7%	N/A	30.3%	1.7%
Audiologist	N/A	15.5%	4.2%	10.2%	2.7%	0.1%	65.4%	1.7%
Chiropractor	0.1%	18.3%	2.1%	11.9%	3.0%	0.5%	62.0%	2.0%
Doctor of Podiatric Medicine	0.3%	29.3%	2.5%	6.1%	2.3%	0.3%	56.5%	2.6%
Licensed Acupuncturist	<0.1%	59.0%	0.6%	4.6%	2.3%	0.2%	31.7%	1.4%
Occupational Therapist	0.1%	32.3%	2.1%	11.4%	3.1%	0.7%	49.1%	1.4%
Occupational Therapy Assistant	0.1%	28.7%	4.5%	24.6%	2.9%	1.3%	36.5%	1.6%
Optometrist	0.1%	55.8%	0.8%	6.0%	1.6%	0.5%	33.5%	1.7%
Pharmacy Technician	0.3%	26.8%	5.2%	41.2%	2.7%	1.5%	20.4%	1.8%
Physical Therapist	0.1%	30.3%	1.5%	9.4%	3.7%	0.6%	53.0%	1.3%
Physical Therapist Assistant	0.3%	30.5%	2.6%	20.9%	3.5%	1.3%	39.3%	1.5%
Polysomnographic Technician	N/A	33.9%	N/A	34.1%	14.6%	3.4%	14.0%	N/A
Polysomnographic Technologist	N/A	31.8%	5.1%	26.7%	5.5%	1.5%	29.5%	N/A
Psychiatric Technician	0.4%	16.9%	17.7%	34.5%	3.7%	1.3%	23.6%	2.0%
Registered Pharmacist	0.1%	60.8%	2.8%	3.9%	2.4%	0.3%	27.6%	2.0%
Respiratory Care Practitioner	0.3%	26.2%	6.1%	28.6%	3.3%	2.2%	31.3%	2.0%
Speech Pathologist	0.1%	14.1%	2.6%	15.7%	3.2%	0.1%	62.8%	1.4%
Speech-Language Pathology Assistant	0.3%	9.6%	3.3%	53.7%	2.9%	0.2%	28.9%	1.2%
All	0.2%	33.4%	3.9%	20.4%	2.9%	0.9%	36.5%	1.7%

Note: Due to the way individual races/ethnicities were combined, there are levels of nuance within each group that are not captured by these figures.

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Figure A-8: Languages Spoken: Allied Health

Spanish-speaking populations are underrepresented overall and in 16 out of the 18 Allied Health license types. Populations who are fluent in Asian and Pacific Islander languages are represented higher overall, relative to their percentages of the population, but are underrepresented in five out of the 18 Allied Health professions. Populations who are fluent in Other Indo-European languages are represented higher overall, relative to their percentages of the population, but are underrepresented in four out of the 18 Allied Health license types.



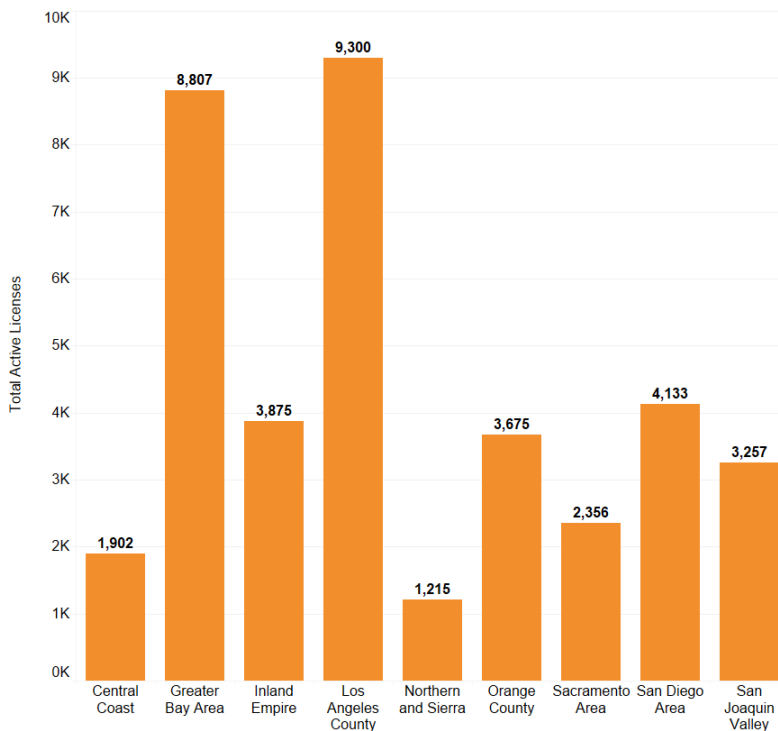
Optometrists have the highest proportion of licensees who provide services in multiple census language groups.

Active License in CA	Asian and Pacific Islander	English Only	Other Indo-European	Spanish	Multiple Census Language Groups	Other
Advanced Practice Pharmacist	24.5%	45.6%	11.3%	8.1%	3.9%	6.6%
Audiologist	5.8%	63.5%	5.7%	13.9%	4.2%	7.0%
Chiropractor	9.8%	56.3%	9.1%	17.1%	5.0%	2.5%
Doctor of Podiatric Medicine	10.5%	49.5%	12.5%	18.1%	6.4%	3.0%
Licensed Acupuncturist	46.3%	32.1%	6.1%	8.9%	4.9%	1.7%
Occupational Therapist	12.6%	62.9%	5.5%	13.0%	3.2%	2.7%
Occupational Therapy Assistant	15.6%	51.7%	3.7%	21.6%	4.4%	3.0%
Optometrist	20.1%	38.6%	7.3%	22.7%	9.3%	2.1%
Pharmacy Technician	15.5%	42.2%	6.9%	29.0%	2.4%	4.0%
Physical Therapist	12.8%	58.7%	6.7%	15.1%	4.2%	2.4%
Physical Therapist Assistant	15.5%	50.3%	5.2%	21.5%	5.3%	2.2%
Polysomnographic Technician	21.6%	45.3%	8.1%	21.0%	2.0%	2.0%
Polysomnographic Technologist	20.9%	61.6%	2.1%	13.7%	0.8%	0.9%
Psychiatric Technician	9.4%	63.0%	2.5%	17.6%	1.6%	6.0%
Registered Pharmacist	26.6%	45.1%	11.9%	6.0%	3.9%	6.6%
Respiratory Care Practitioner	13.0%	58.4%	5.8%	17.9%	2.0%	3.0%
Speech Pathologist	4.1%	69.6%	5.9%	13.9%	2.7%	3.9%
Speech-Language Pathology Assistant	3.4%	47.1%	3.3%	35.6%	3.7%	6.8%
All	16.4%	51.5%	7.1%	17.7%	3.6%	3.8%

Note: Due to the way individual languages were combined, there are levels of nuance within each group that are not captured by these figures.

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Figure A-9: Active Licenses: Allied Health



The Los Angeles County Region has the highest total number of Allied Health licensees in the state while the Northern and Sierra Region has the lowest rates of Allied Health licensees overall.

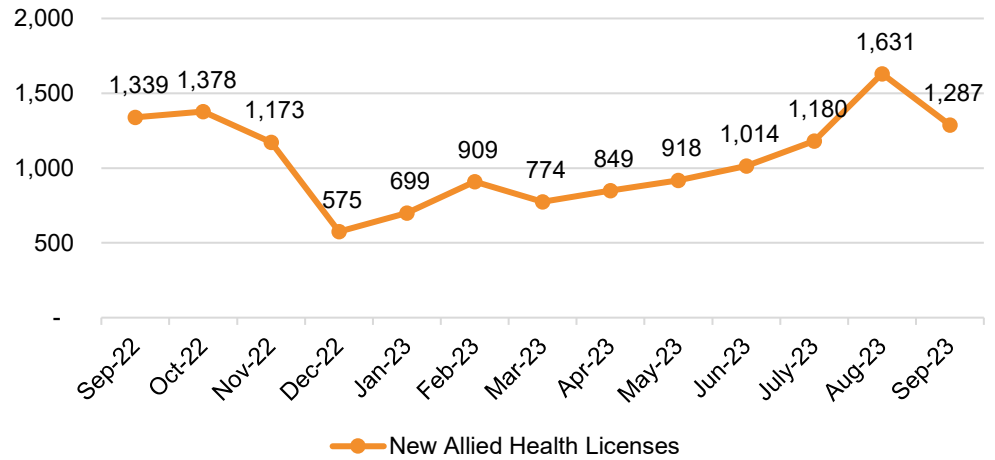
Pharmacy Technicians are the largest workforce in the Allied Health category, representing just over 26 percent of active licenses. In general, more specialized licenses (such as Polysomnographic Technologists) tend to have a much lower license counts while more generalized licenses (such as Pharmacy Technician) have higher counts.

Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Advanced Practice Pharmacist	22	186	96	384	20	185	84	102	57
Audiologist	75	394	89	349	23	161	121	217	76
Chiropractor	810	2,472	749	2,729	395	1,378	579	1,056	591
Doctor of Podiatric Medicine	109	502	154	572	65	218	125	147	148
Licensed Acupuncturist	612	2,689	409	3,207	193	1,194	239	976	120
Occupational Therapist	962	3,526	1,044	3,892	323	1,500	804	1,501	665
Occupational Therapy Assistant	134	168	630	1,146	103	533	317	473	248
Optometrist	354	1,865	622	1,856	157	921	430	638	446
Pharmacy Technician	2,827	9,699	8,647	17,515	1,988	4,614	4,241	5,686	7,670
Physical Therapist	1,928	5,856	2,056	5,806	911	2,829	1,863	3,090	1,627
Physical Therapist Assistant	445	1,116	1,169	1,976	376	823	487	819	770
Polysomnographic Technician	8	28	27	16	13	2	20	1	29
Polysomnographic Technologist	42	130	53	70	21	60	68	30	55
Psychiatric Technician	1,104	1,281	1,946	779	168	440	306	95	2,408
Registered Pharmacist	1,464	8,714	2,989	10,283	782	6,538	3,020	3,624	2,876
Respiratory Care Practitioner	778	2,649	3,965	4,601	655	1,390	1,480	1,753	2,213
Speech Pathologist	1,129	3,346	1,492	3,703	524	1,729	1,157	1,905	1,390
Speech-Language Pathology Assistant	159	264	780	1,505	113	655	336	223	363

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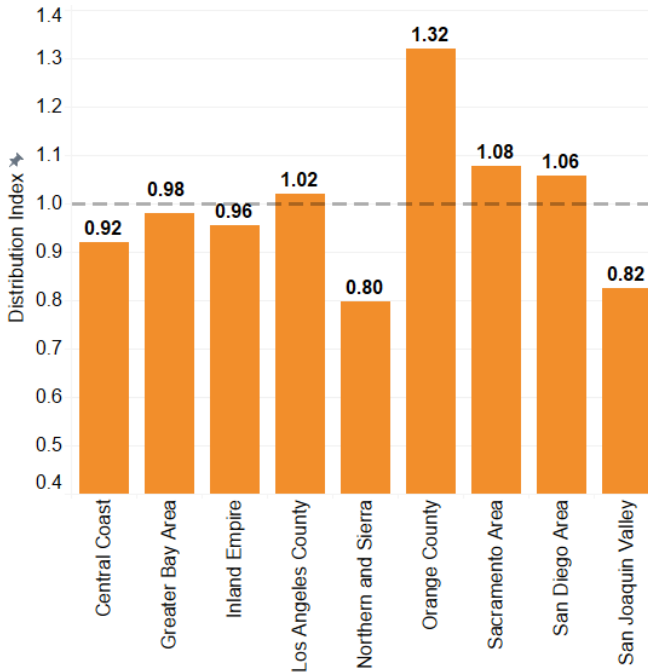
Figure A-10: New Licenses: Allied Health

New Allied Health licenses exhibit a seasonality, with more new licenses recorded in the summer and fall months, coinciding with the conclusion of the academic school year. On average, there were 1,056 new Allied Health licenses added per month from September 2022 to September 2023.



Future work will aim to identify trends within each profession, as well as modeling future completions.

Figure A-11: Distribution Index: Allied Health



The distribution index describes the magnitude of difference between a region’s share of the state’s providers and its share of the state’s population. A distribution index of 1 indicates the region has an equal share of the state’s providers and population (e.g., 10 percent of the state’s providers and 10 percent of the state’s population). A distribution index below 1 indicates a smaller share of providers than population (e.g., 5 percent of the state’s providers and 10 percent of the state’s population), and a distribution index greater than 1 indicates the opposite. The further away the index is from 1, the greater the maldistribution.

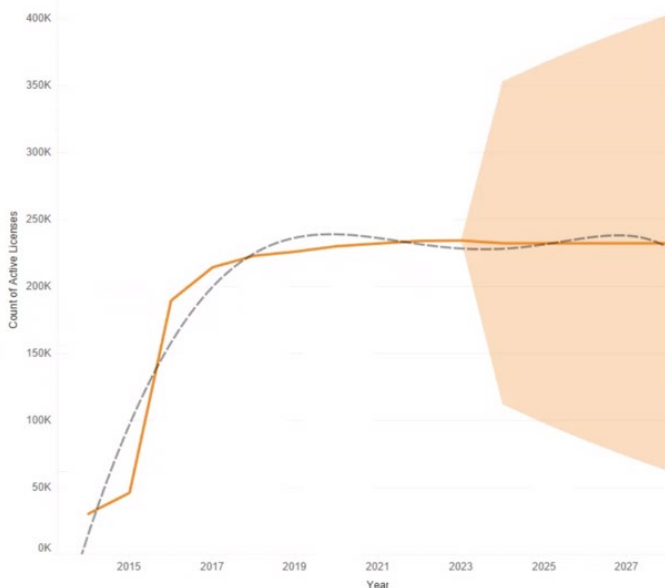
The Orange County Region has a high ratio for 7 of the 18 Allied Health professions. Conversely, the San Joaquin Valley and Northern and Sierra Regions have the lowest distribution indexes across all Allied Health license types.

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Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Advanced Practice Pharmacist	0.33	0.85	0.71	1.35	0.49	2.02	1.21	1.01	0.45
Audiologist	0.84	1.36	0.50	0.93	0.42	1.33	1.31	1.62	0.45
Chiropractor	1.27	1.19	0.59	1.01	1.02	1.59	0.88	1.10	0.49
Doctor of Podiatric Medicine	0.90	1.27	0.63	1.12	0.88	1.33	1.00	0.81	0.65
Licensed Acupuncturist	1.07	1.44	0.36	1.33	0.55	1.54	0.40	1.14	0.11
Occupational Therapist	1.14	1.28	0.62	1.09	0.63	1.31	0.92	1.19	0.42
Occupational Therapy Assistant	0.60	0.23	1.41	1.22	0.76	1.76	1.38	1.42	0.59
Optometrist	0.82	1.32	0.72	1.02	0.60	1.57	0.96	0.98	0.55
Pharmacy Technician	0.76	0.80	1.16	1.11	0.88	0.91	1.10	1.02	1.10
Physical Therapist	1.25	1.17	0.67	0.89	0.97	1.35	1.17	1.34	0.56
Physical Therapist Assistant	0.94	0.72	1.23	0.99	1.30	1.28	0.99	1.15	0.87
Polysomnographic Technician	0.93	1.01	1.58	0.44	2.50	0.17	2.26	0.08	1.81
Polysomnographic Technologist	1.34	1.27	0.84	0.53	1.10	1.41	2.10	0.64	0.93
Psychiatric Technician	2.18	0.78	1.92	0.37	0.55	0.64	0.58	0.13	2.54
Registered Pharmacist	0.61	1.12	0.62	1.02	0.54	2.01	1.22	1.01	0.64
Respiratory Care Practitioner	0.67	0.70	1.71	0.94	0.93	0.89	1.24	1.01	1.02
Speech Pathologist	1.16	1.06	0.77	0.90	0.89	1.31	1.15	1.31	0.76
Speech-Language Pathology Assistant	0.61	0.31	1.49	1.37	0.71	1.85	1.25	0.57	0.74
Grand Total	0.92	0.98	0.96	1.02	0.80	1.32	1.08	1.06	0.82

Note: Distribution index values less than or equal to 0.5 (indicating a low license to population ratio) are marked in light orange. Indexes greater than or equal to 1.5 (indicating a high license to population ratio) are marked in dark orange.

Figure A-12: Supply: Allied Health



To project supply for the Allied Health workforce, a multi-polynomial model with a 95 percent confidence interval was used (Figure A-12). Actual license counts from 2014-2023 were used to predict the years' supply of licenses for 2024-2028.

All Allied Health professions are expected to have an increase in active licenses in the workforce with the exception of Occupational Therapists, Occupational Therapy Assistants, and Pharmacy Technicians (Table A-1). These predictions were made using a multi-polynomial model with a 95 percent confidence interval.

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License Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Advanced Practice Pharmacist			120	120	326	537	803	890	1047	1,136	1,305	1,450	1,596	1,741	1,886
Audiologist			1,382	1,391	1,448	1,482	1,512	1,531	1,523	1,505	1,510	1,510	1,510	1,510	1,510
Chiropractor			11,835	11,824	11,814	11,737	11,686	11,599	10,691	10,759	10,969	10,969	10,969	10,969	10,969
Doctor of Podiatric Medicine	13,647	14,065	10,086	10,351	10,594	10,777	10,791	10,821	9,685	9,639	9,943	9,943	9,943	9,943	9,943
Licensed Acupuncturist	1,027	13,906	12,791	11,435	11,699	11,942	12,215	12,293	13,846	14,217	12,460	12,460	12,460	12,460	12,460
Occupational Therapist	398	2,875	2,762	2,646	2,780	2,893	2,980	2,994	3,597	3,752	3,403	3,403	3,403	3,403	3,403
Occupational Therapy Assistant				6,488	6,656	6,736	6,942	6,945	7,276	7,289	7,426	7,553	7,683	7,814	7,948
Optometrist			68,879	68,202	67,430	66,463	65,738	64,938	64,915	62,887	62,711	61,997	61,283	60,568	59,854
Pharmacy Technician			21,938	22,563	22,918	23,205	23,670	23,882	25,460	25,966	26,354	26,946	27,552	28,171	28,804
Physical Therapist				6,425	6,592	6,766	6,895	6,982	7,651	7,981	8,142	8,425	8,719	9,022	9,337
Physical Therapist Assistant			129	129	130	131	144	137	146	144	147	149	151	153	156
Polysomnographic Technician			3,055	7,111	8,881	8,977	8,875	8,905	8,694	8,527	8,600	8,600	8,600	8,600	8,600
Polysomnographic Technologist			34,601	35,554	36,615	37,641	38,578	39,507	39,907	40,290	41,228	41,950	42,673	43,396	44,118
Psychiatric Technician			6,562	13,919	18,081	18,717	18,857	19,474	19,304	19,484	19,239	19,239	19,239	19,239	19,239
Registered Pharmacist	13,285	12,967	12,715	13,288	13,784	14,547	15,148	15,733	16,061	16,375	16,828	17,271	17,725	18,190	18,668
Respiratory Care Practitioner	1,969	2,343	2,687	2,906	3,220	3,533	5,297	5,538	4,249	4,398	4,487	4,487	4,487	4,487	4,487
Total	30,326	46,156	189,542	214,352	222,968	226,084	230,131	232,169	234,052	234,349	234,752	236,352	237,993	239,666	241,382

Note: Cells shaded in light orange are predictions based on the Workforce Supply Model (see Figure A-12).

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Appendix B: Behavioral Health, All Figures

This section focuses on licenses issued by the California Board of Behavioral Sciences (Associate Clinical Social Worker, Associate Marriage and Family Therapist, Associate Professional Clinical Counselor, Licensed Clinical Social Worker, Licensed Educational Psychologist, Licensed Marriage and Family Therapist, Licensed Professional Clinical Counselor), the Board of Registered Nursing (Psychiatric Mental Health Nurse) and the Board of Psychology (Psychologist, Registered Psychological Associate).

Figure B-1: Education Pipeline: Behavioral Health

Over the last ten years there has not been a statistically significant trend in the number of institutions offering Behavioral Health programs. However, there has been a significant increase in the number of Behavioral Health programs offered (40.2 percent), as well as the number of individuals completing those programs (31.8 percent). This suggests there may be future increases in the number of individuals applying for licensure. Future work will aim to identify trends within each profession, as well as modeling future completion metrics to better understand potential workforce supply.

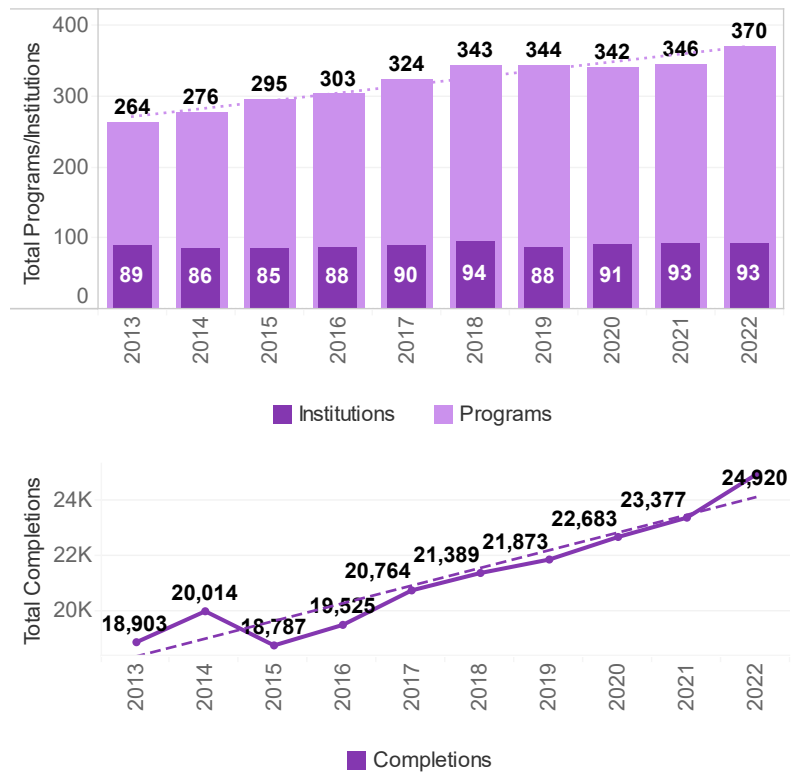
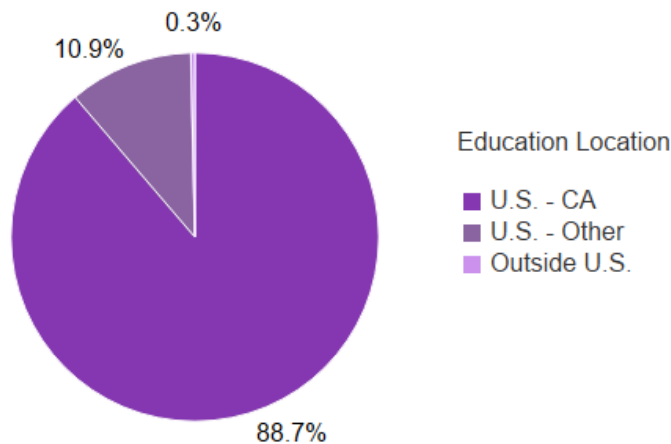


Figure B-2: Education Location: Behavioral Health



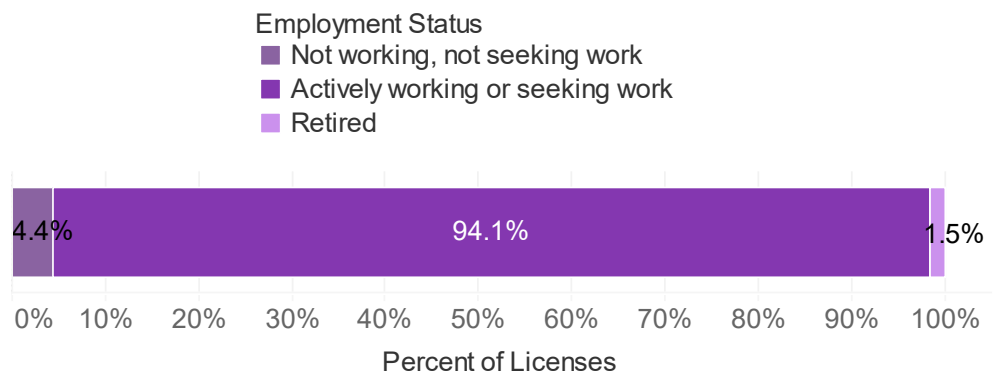
Nearly all Behavioral Health professionals complete their education in the U.S. (99.7 percent) with nearly 90 percent receiving their initial qualifying degree in California. Psychiatric Mental Health Nurses are outliers in this area, with only 47.1 percent receiving their initial qualifying degree in California, and 4 percent receiving their initial qualifying degree from outside the U.S. Future work will aim to use this information in conjunction with education pipeline data to better understand potential workforce supply.

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Active License in CA	U.S. - CA	U.S. - Other	Outside U.S.
Associate Clinical Social Worker	86.3%	13.4%	0.4%
Associate Marriage and Family Therapist	97.6%	2.2%	0.2%
Associate Professional Clinical Counselor	85.0%	14.8%	0.2%
Licensed Clinical Social Worker	82.4%	17.2%	0.0%
Licensed Educational Psychologist	92.6%	7.4%	0.4%
Licensed Marriage and Family Therapist	96.7%	3.1%	0.2%
Licensed Professional Clinical Counselor	68.5%	31.0%	0.6%
Psychiatric Mental Health Nurse	47.1%	48.9%	4.0%
Psychologist	78.3%	21.1%	0.6%
Registered Psychological Associate	89.1%	9.9%	1.0%
All	88.7%	10.9%	0.3%

Figure B-3: Employment Status: Behavioral Health

Nearly 95 percent of Behavioral Health professionals are actively working or seeking work. Outliers include Psychiatric Mental Health Nurses with over 28 percent already retired, and only 73.1 percent of Licensed Educational



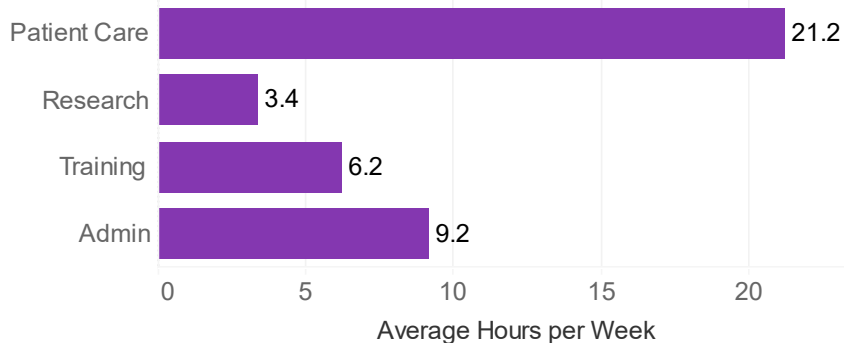
Psychologists actively working or seeking work. These metrics will be used in the future to calculate more accurate supply data for each profession.

Active License in CA	Actively Working or Seeking Work	Not Working, Not Seeking Work	Retired
Associate Clinical Social Worker	93.5%	6.3%	0.1%
Associate Marriage and Family Therapist	95.0%	4.8%	0.1%
Associate Professional Clinical Counselor	94.3%	5.6%	0.0%
Licensed Clinical Social Worker	92.6%	4.2%	3.1%
Licensed Educational Psychologist	73.1%	20.8%	6.1%
Licensed Marriage and Family Therapist	94.6%	3.6%	1.8%
Licensed Professional Clinical Counselor	94.6%	4.6%	0.8%
Psychiatric Mental Health Nurse	67.1%	4.5%	28.3%
Psychologist	96.6%	2.1%	1.3%
Registered Psychological Associate	97.0%	2.9%	0.1%
All	94.1%	4.4%	1.5%

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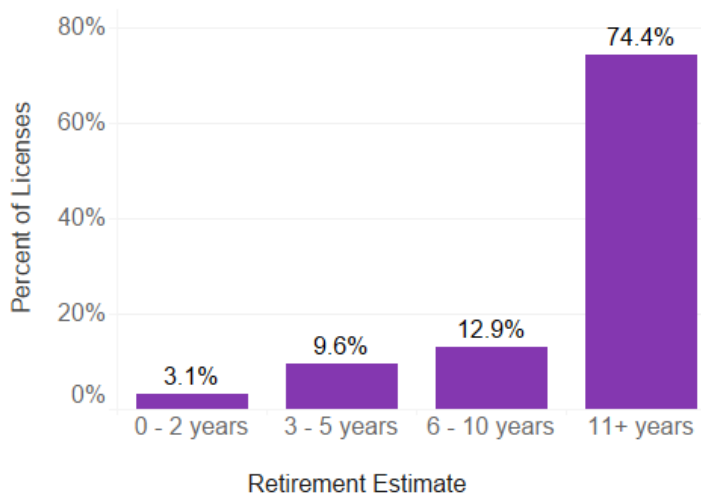
Figure B-4: Full-Time Equivalent Metrics: Behavioral Health

On average, Behavioral Health professionals spend the highest number of hours per week on Patient Care (21.2 hours), and the least amount of time per week on Research (3.4 hours). Outliers include Psychiatric Mental Health Nurses with only 13.4 hours per week spent on Patient Care, and notable below average are Licensed Educational Psychologists with only 15.7 hours per week spent on Patient Care. These metrics will be used in the future to calculate more accurate patient-to-provider ratios for each profession, which in turn will lead to more accurate supply and demand modeling.



Active License in CA	Patient Care	Research	Training	Admin
Associate Clinical Social Worker	25.8	5.4	7.5	8.8
Associate Marriage and Family Therapist	21.4	4.1	6.4	8.5
Associate Professional Clinical Counselor	22.0	4.1	6.6	9.3
Licensed Clinical Social Worker	21.3	2.7	6.1	10.1
Licensed Educational Psychologist	15.7	2.7	6.1	8.9
Licensed Marriage and Family Therapist	19.7	2.9	5.8	9.2
Licensed Professional Clinical Counselor	19.7	3.0	5.6	9.3
Psychiatric Mental Health Nurse	13.4	3.4	5.9	6.8
Psychologist	20.0	2.6	5.7	8.6
Registered Psychological Associate	22.1	4.2	7.4	8.8
All	21.2	3.4	6.2	9.2

Figure B-5: Retirement Estimates: Behavioral Health



Of the active Behavioral Health professionals, 74.4 percent estimate retiring in 11 or more years, and only 3.1 percent estimate retiring in the next 2 years. Of particular note are Psychiatric Mental Health Nurses, with nearly 70 percent estimating retiring in the next five years. These metrics will be crucial for calculating more accurate supply and demand models for each profession. In addition, this information may be useful in helping to identify which areas are in most need of funding to maintain the supply of Behavioral Health professionals across the state.

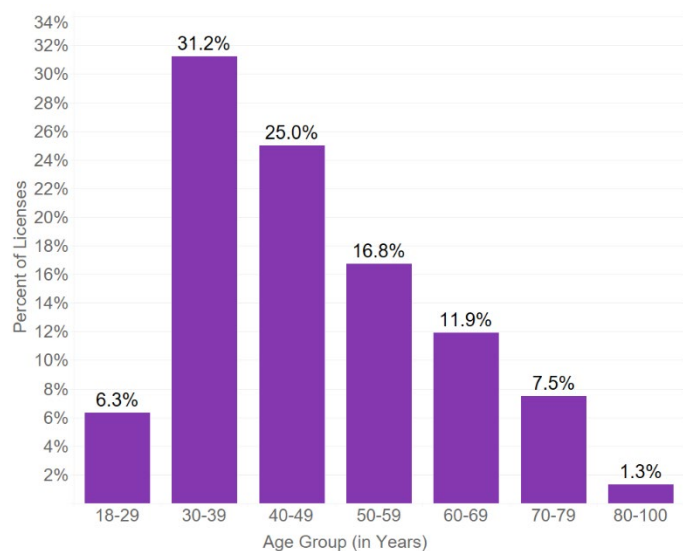
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Active License in CA	0-2 Years	3-5 Years	6-10 Years	11+ Years
Associate Clinical Social Worker	0.5%	1.6%	5.1%	92.9%
Associate Marriage and Family Therapist	0.7%	1.8%	5.9%	91.7%
Associate Professional Clinical Counselor	0.3%	1.1%	4.2%	94.4%
Licensed Clinical Social Worker	4.7%	11.8%	15.2%	68.4%
Licensed Educational Psychologist	5.1%	15.0%	21.7%	58.2%
Licensed Marriage and Family Therapist	3.8%	13.5%	16.9%	65.8%
Licensed Professional Clinical Counselor	1.2%	6.9%	12.2%	79.7%
Psychiatric Mental Health Nurse	28.5%	41.0%	18.8%	11.7%
Psychologist	5.0%	15.8%	17.0%	62.1%
Registered Psychological Associate	0.1%	0.5%	4.0%	95.4%
All	3.1%	9.6%	12.9%	74.4%

Figure B-6: Age Distribution: Behavioral Health

Overall, 20.7 percent of licensees in the Behavioral Health category are 60 years old and over.

Around 86 percent of Psychiatric Mental Health Nurses, 33 percent of Psychologists, 31 percent of Licensed Marriage and Family Therapists, 28 percent of Licensed Educational Psychologists, 21 percent Licensed Clinical Social Workers, 16 percent of Licensed Professional Clinical Counselors, 9 percent of Registered Psychological Associate, 7 percent of Associate Marriage and Family Therapists, 4 percent of Associate Professional Clinical Counselors, and 3 percent of Associate Clinical Social Workers are 60 years and over.

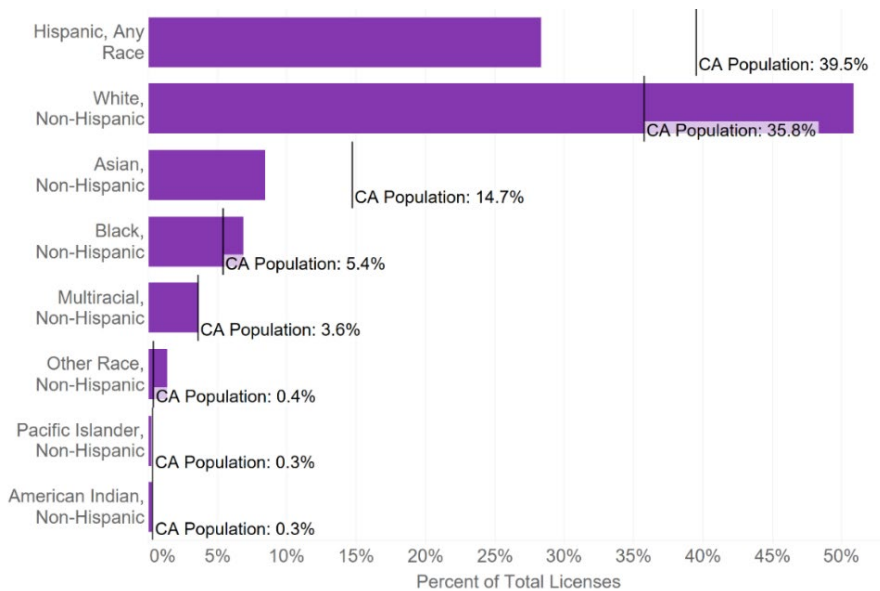


Active License in CA	18-29	30-39	40-49	50-59	60-69	70-79	80-100
Associate Clinical Social Worker	20.8%	48.4%	18.9%	8.8%	2.8%	0.3%	<0.1%
Associate Marriage and Family Therapist	16.4%	42.6%	21.1%	13.1%	5.7%	1.1%	<0.1%
Associate Professional Clinical Counselor	18.3%	47.4%	19.4%	10.6%	3.5%	0.6%	N/A
Licensed Clinical Social Worker	1.3%	30.0%	29.1%	18.3%	12.8%	7.3%	1.3%
Licensed Educational Psychologist	0.4%	13.9%	33.0%	24.6%	15.8%	10.2%	2.0%
Licensed Marriage and Family Therapist	0.8%	23.3%	25.3%	19.5%	16.9%	11.9%	2.3%
Licensed Professional Clinical Counselor	2.5%	35.9%	26.6%	18.7%	12.3%	3.8%	0.2%
Psychiatric Mental Health Nurse	N/A	N/A	5.1%	9.2%	30.6%	48.0%	7.1%
Psychologist	<0.1%	17.5%	28.2%	21.3%	17.0%	13.9%	2.1%
Registered Psychological Associate	7.6%	41.5%	29.3%	12.4%	7.5%	1.5%	0.1%
All	6.3%	31.2%	25.0%	16.8%	11.9%	7.5%	1.3%

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Figure B-7: Race/Ethnicity: Behavioral Health

Hispanic/Latine/x populations are underrepresented overall and in nine out of the ten Behavioral Health license types. White populations are represented higher overall, relative to their percentages of the population, but are underrepresented among Associate Clinical Social Workers. Asian populations are underrepresented overall and in all ten Behavioral Health professions. Black populations are represented higher overall, relative to their percentages of the population, but are underrepresented in four out of the ten Behavioral Health license types.



Behavioral Health professions have the lowest representation of Asian populations, around 8 percent, out of all the professions highlighted in this report.

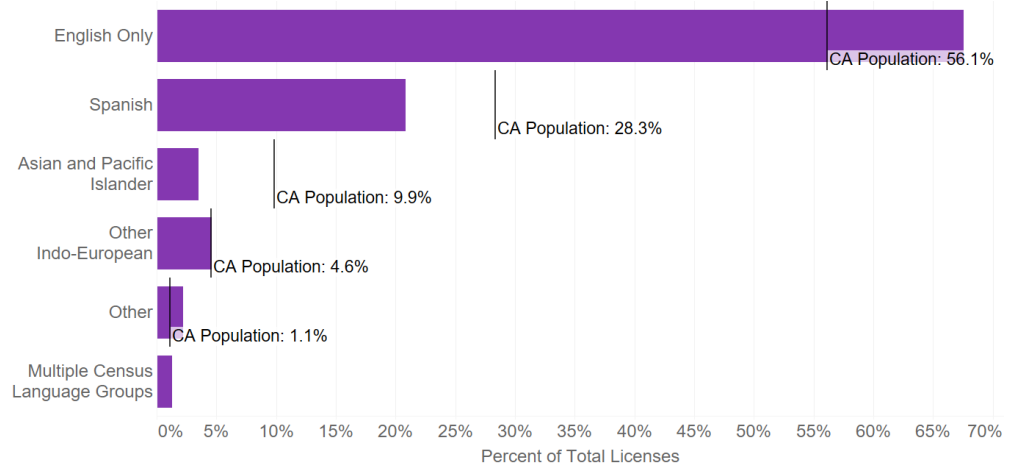
Active License in CA	American Indian, NH	Asian, NH	Black, NH	Hispanic/Latine/x	Multiracial, NH	Pacific Islander, NH	White, NH	Other Race, NH
Associate Clinical Social Worker	0.5%	9.3%	10.7%	50.8%	3.6%	0.3%	24.1%	0.7%
Associate Marriage and Family Therapist	0.1%	9.7%	9.7%	36.8%	4.6%	0.3%	37.7%	1.2%
Associate Professional Clinical Counselor	0.1%	10.5%	10.5%	34.8%	4.7%	0.2%	37.8%	1.3%
Licensed Clinical Social Worker	0.3%	9.4%	6.8%	29.8%	3.3%	0.2%	48.9%	1.3%
Licensed Educational Psychologist	0.4%	6.8%	5.1%	18.8%	4.1%	0.1%	63.5%	1.2%
Licensed Marriage and Family Therapist	0.3%	6.4%	4.6%	20.6%	3.3%	0.2%	63.0%	1.7%
Licensed Professional Clinical Counselor	0.4%	7.0%	5.1%	16.5%	4.2%	0.3%	65.6%	0.9%
Psychiatric Mental Health Nurse	N/A	4.7%	6.5%	3.2%	4.0%	N/A	81.5%	N/A
Psychologist	0.1%	9.2%	4.0%	11.4%	3.4%	0.1%	70.2%	1.5%
Registered Psychological Associate	0.4%	10.7%	12.1%	23.9%	6.0%	N/A	45.4%	1.4%
All	0.3%	8.4%	6.8%	29.3%	3.6%	0.2%	50.9%	1.4%

Note: Due to the way individual races/ethnicities were combined, there are levels of nuance within each group that are not captured by these figures.

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Figure B-8: Languages Spoken: Behavioral Health

Spanish-speaking populations are underrepresented overall and in nine out of the ten Behavioral Health professions. Populations who are fluent in Asian and Pacific Islander languages are underrepresented overall and in all ten Behavioral Health license types. Populations who are fluent in Other Indo-European languages are well represented overall but are underrepresented in five out of the ten Behavioral Health professions.



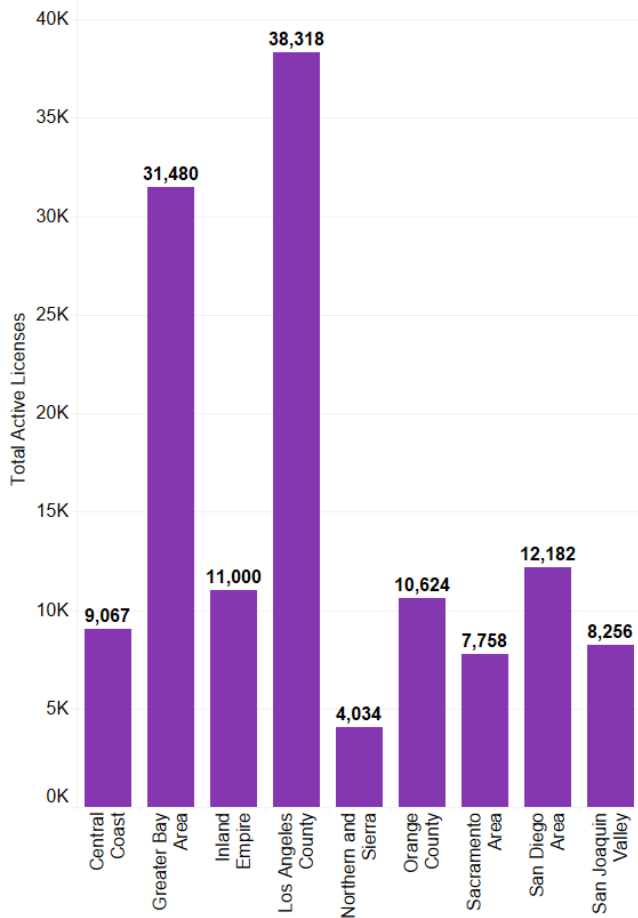
Behavioral Health professions have the lowest representation of Asian and Pacific Islander language speakers, around 4 percent, out of all the professions highlighted in this report.

Active License in CA	Asian and Pacific Islander	English Only	Other Indo-European	Spanish	Multiple Census Language Groups	Other
Associate Clinical Social Worker	4.2%	52.1%	2.9%	37.4%	1.1%	2.3%
Associate Marriage and Family Therapist	4.4%	61.0%	5.4%	25.2%	1.5%	2.5%
Associate Professional Clinical Counselor	4.2%	63.8%	4.7%	22.9%	1.3%	3.1%
Licensed Clinical Social Worker	3.7%	66.2%	3.2%	24.3%	1.1%	1.6%
Licensed Educational Psychologist	3.3%	74.1%	4.3%	15.9%	1.0%	1.4%
Licensed Marriage and Family Therapist	2.7%	74.1%	5.2%	14.5%	1.4%	2.2%
Licensed Professional Clinical Counselor	3.5%	78.1%	4.0%	11.8%	1.1%	1.5%
Psychiatric Mental Health Nurse	4.7%	87.9%	2.4%	1.2%	N/A	3.8%
Psychologist	3.0%	77.2%	6.3%	9.3%	1.6%	2.6%
Registered Psychological Associate	4.6%	63.0%	9.2%	15.3%	2.8%	5.2%
All	3.5%	67.6%	4.6%	20.8%	1.3%	2.2%

Note: Due to the way individual languages were combined, there are levels of nuance within each group that are not captured by these figures.

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Figure B-9: Active Licenses: Behavioral Health



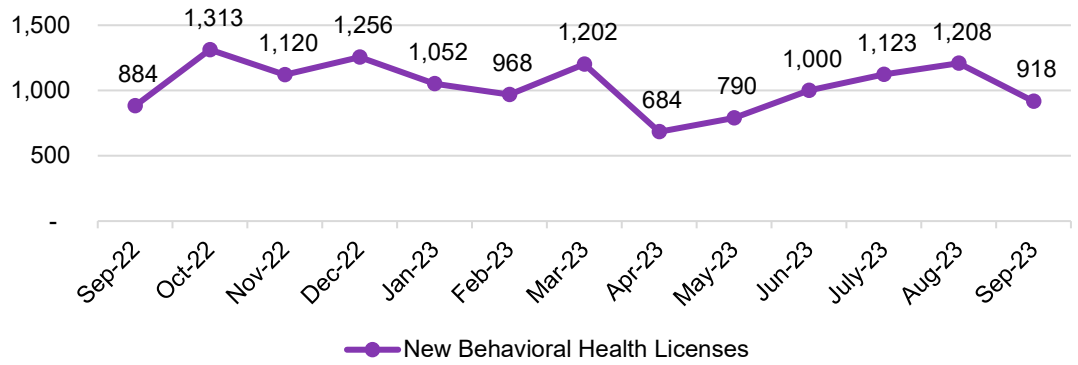
Licensed Marriage and Family Therapists are the largest Behavioral Health group, representing 33 percent of active Behavioral Health licenses. The Los Angeles County Region has the highest count of Behavioral Health licensees in the state while the Northern and Sierra Region has the lowest count of Behavioral Health licensees overall.

Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Associate Clinical Social Worker	760	2,484	1,718	5,142	516	1,008	762	1,199	1,524
Associate Marriage and Family Therapist	902	2,747	1,460	4,062	328	1,066	637	1,102	987
Associate Professional Clinical Counselor	268	888	670	915	93	413	285	554	362
Licensed Clinical Social Worker	1,760	7,041	2,383	9,846	1,063	2,230	2,031	2,671	1,817
Licensed Educational Psychologist	126	367	117	361	53	171	121	124	109
Licensed Marriage and Family Therapist	3,789	10,774	3,344	11,530	1,530	3,792	2,580	3,648	2,456
Licensed Professional Clinical Counselor	187	756	325	605	114	279	241	487	189
Psychiatric Mental Health Nurse	14	59	14	47	3	10	7	21	5
Psychologist	1,170	6,008	833	5,224	307	1,481	1,013	2,169	703
Registered Psychological Associate	91	356	136	586	27	174	81	207	104

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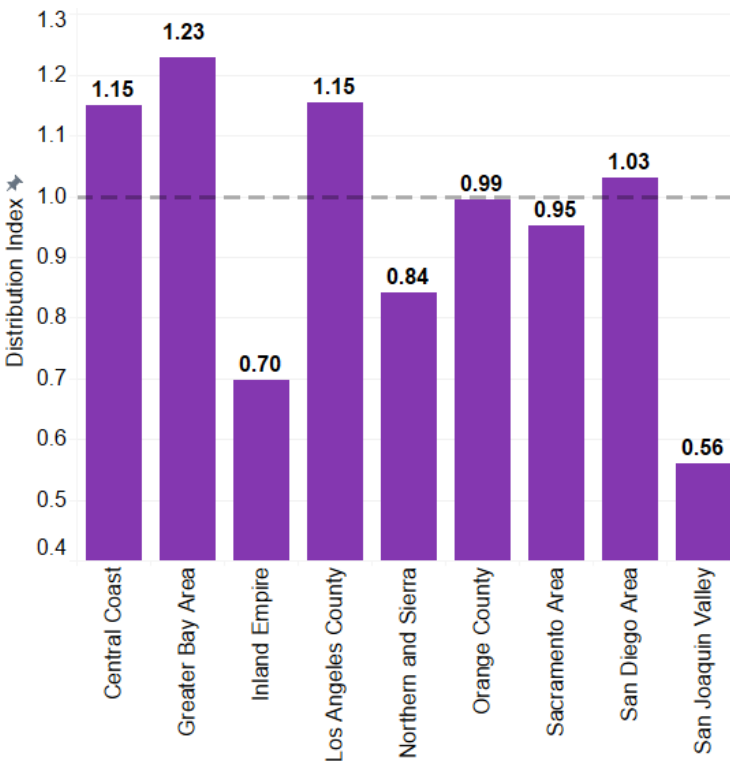
Figure B-10: New Licenses: Behavioral Health

New licenses were added in a fairly consistent manner throughout the year. On average, there were 1,040 new licenses added per month from September 2022-September 2023.



Future work will aim to identify trends within each profession, as well as modeling future completions.

Figure B-11: Distribution Index: Behavioral Health



The distribution index describes the magnitude of difference between a region’s share of the state’s providers and its share of the state’s population. A distribution index of 1 indicates the region has an equal share of the state’s providers and population (e.g., 10 percent of the state’s providers and 10 percent of the state’s population). A distribution index below 1 indicates a smaller share of providers than population (e.g., 5 percent of the state’s providers and 10 percent of the state’s population), and a distribution index greater than 1 indicates the opposite. The further away the index is from 1, the greater the maldistribution.

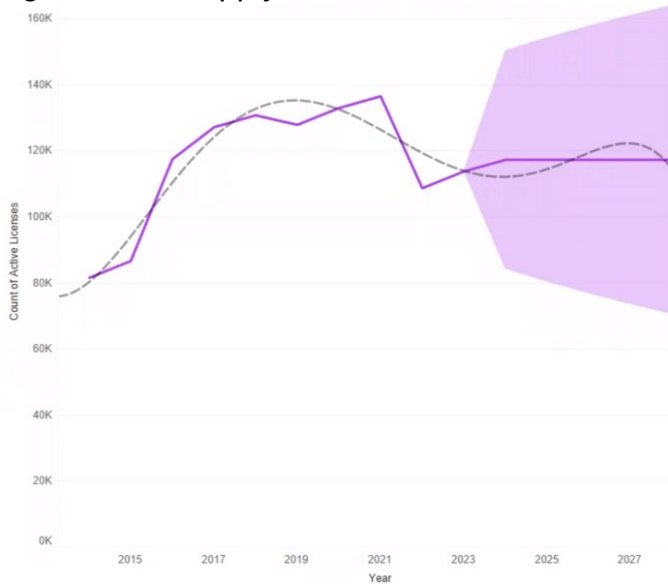
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Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Associate Clinical Social Worker	0.85	0.85	0.96	1.36	0.95	0.83	0.82	0.89	0.91
Associate Marriage and Family Therapist	1.14	1.07	0.92	1.22	0.68	1.00	0.78	0.93	0.67
Associate Professional Clinical Counselor	1.01	1.03	1.27	0.82	0.58	1.15	1.04	1.40	0.73
Licensed Clinical Social Worker	0.96	1.18	0.65	1.28	0.95	0.90	1.07	0.97	0.53
Licensed Educational Psychologist	1.37	1.23	0.64	0.93	0.95	1.37	1.27	0.90	0.63
Licensed Marriage and Family Therapist	1.47	1.28	0.65	1.06	0.97	1.08	0.97	0.94	0.51
Licensed Professional Clinical Counselor	0.99	1.23	0.86	0.76	0.99	1.09	1.23	1.72	0.53
Psychiatric Mental Health Nurse	1.31	1.70	0.65	1.04	0.46	0.69	0.63	1.31	0.25
Psychologist	1.04	1.64	0.37	1.10	0.45	0.97	0.87	1.29	0.33
Registered Psychological Associate	0.87	1.05	0.65	1.33	0.42	1.23	0.75	1.32	0.53
Total	1.15	1.23	0.70	1.15	0.84	0.99	0.95	1.03	0.56

Note: Distribution index values less than or equal to 0.5 (indicating a low license to population ratio) are marked in light purple. Indexes greater than or equal to 1.5 (indicating a high license to population ratio) are marked in dark purple.

The San Joaquin Valley Region has a smaller share of all Behavioral Health providers compared with its share of the state population. The distribution index of 0.56 indicates that its share of the state’s Behavioral Health licenses is nearly half of its share of the population. Data for the Inland Empire Region shows a similar, slightly less severe, maldistribution.

Figure B-12: Supply: Behavioral Health



To project supply for the Behavioral Health workforce, a multi-polynomial model with a 95 percent confidence interval was used (Figure B-12). Actual license counts from 2014-2023 were used to predict the years’ supply of licenses for 2024-2028.

All professions within Behavioral Health are expected to have an increase in active licenses in the workforce with the exception of Registered Psychological Associates. Clinical Counselors are expected to experience rapid growth. These predictions were made using a multi-polynomial model with a 95 percent confidence interval.

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License Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Associate Clinical Social Worker	11,801	11,599	15,784	18,601	18,944	15,862	16,580	16,612	14,062	15,113	15,232	15,232	15,232	15,232	15,232
Associate Marriage and Family Therapist	15,418	17,820	19,783	22,027	20,392	16,631	15,851	14,848	12,434	13,291	13,757	13,757	13,757	13,757	13,757
Associate Professional Clinical Counselor	744	1,026	1,390	1,679	1,932	1,957	2,286	2,758	4,299	4,448	5,363	6,416	7,677	9,186	10,991
Licensed Clinical Social Worker	21,769	22,842	30,671	33,100	35,645	37,862	40,563	42,397	29,372	30,842	32,810	32,810	32,810	32,810	32,810
Licensed Educational Psychologist			1,294	1,286	1,335	1,417	1,471	1,478	1,489	1,549	1,580	1,615	1,651	1,686	1,722
Licensed Marriage and Family Therapist	29,280	30,674	45,591	47,317	49,134	50,780	52,474	54,025	42,585	43,443	45,429	45,429	45,429	45,429	45,429
Licensed Professional Clinical Counselor	744	1,026	1,390	1,679	1,932	1,957	2,286	2,758	2,674	3,183	3,326	3,560	3,795	4,030	4,265
Psychiatric Mental Health Nurse			259	246	224	194	184	184	187	180	185	185	185	185	185
Psychologist	1,832	1,701	1,333	1,245	1,253	1,230	1,286	1,485	1,622	1,762	1,632	1,632	1,632	1,632	1,632
Total	81,588	86,688	117,495	127,180	130,791	127,890	132,981	136,545	108,724	113,811	119,314	120,636	122,168	123,947	126,023

Note: Cells shaded in light purple are predictions based on the Workforce Supply Model (see Figure B-12).

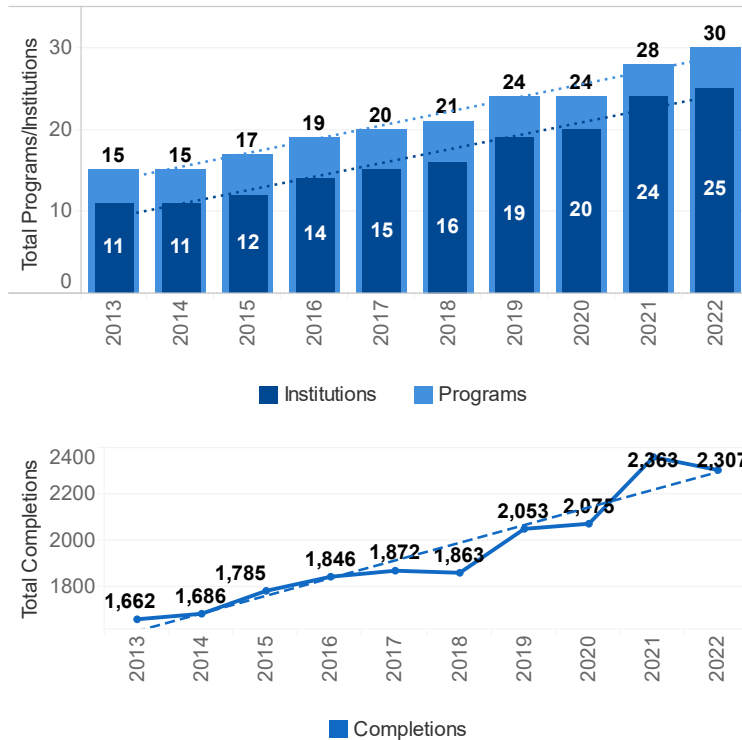
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Appendix C: Medicine, All Figures

This section focuses on licenses issued by the Naturopathic Medicine Committee (Naturopathic Doctor), Medical Board of California (Physician and Surgeon), Osteopathic Medical Board of California (Osteopathic Physician and Surgeon), and the Physician Assistant Board (Physician Assistant).

Figure C-1: Education Pipeline: Medicine

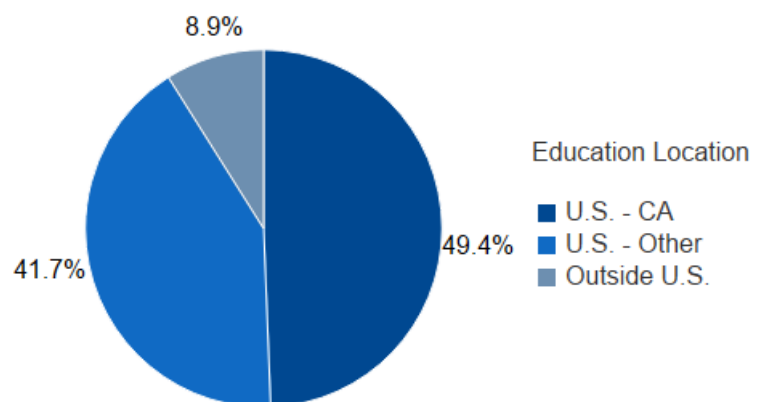
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Since 2012, there has been a statistically significant trend toward an increase in the number of institutions offering Medicine programs in California (127.3 percent), as well as the number of programs offered (100 percent) and the number of individuals completing those programs (38.8 percent). This suggests there may be future increases in the number of individuals applying for licensure. Future work will aim to identify trends within each profession, as well as modeling future completion metrics to better understand potential workforce supply.

Figure C-2: Education Location: Medicine

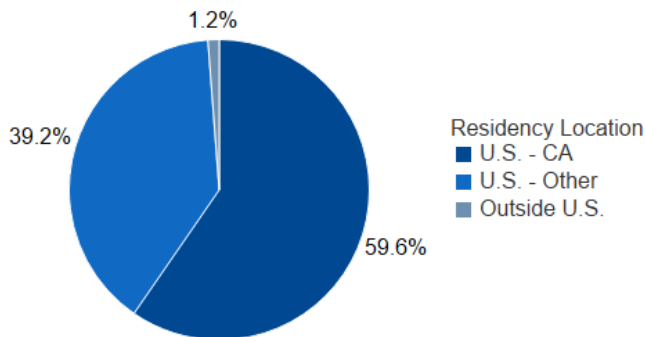
Over 90 percent of Medicine professionals complete their education in the U.S., but less than 50 percent receive their initial qualifying degree within California. Notable below average metrics include Naturopathic Doctors with only 40.9 percent receiving their initial qualifying degree in California, and Physician and Surgeons with over 10 percent receiving their initial qualifying degree from outside the U.S. Future work will aim to use this information in conjunction with education pipeline data to better understand potential workforce supply.



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Active License in CA	U.S. - CA	U.S. - Other	Outside U.S.
Naturopathic Doctor	40.9%	55.0%	4.0%
Osteopathic Physician and Surgeon	59.8%	40.1%	0.1%
Physician And Surgeon	46.5%	42.6%	10.9%
Physician Assistant	65.0%	34.6%	0.3%
All	49.4%	41.7%	8.9%

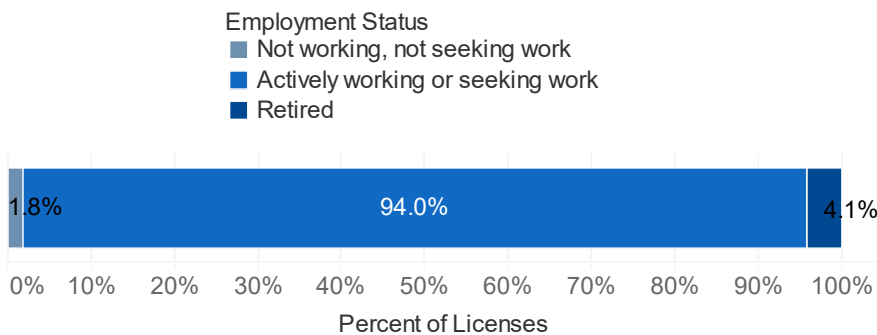
Figure C-3: Residency Location: Medicine



Nearly 99 percent of Medicine professionals completed their residency in the U.S., but less than 60 percent completed their residency within California.

Active License in CA	U.S. - CA	U.S. - Other	Outside U.S.
Osteopathic Physician and Surgeon	58.1%	41.8%	0.1%
Physician And Surgeon	59.8%	39.0%	1.3%
All	59.6%	39.2%	1.2%

Figure C-4: Employment Status: Medicine



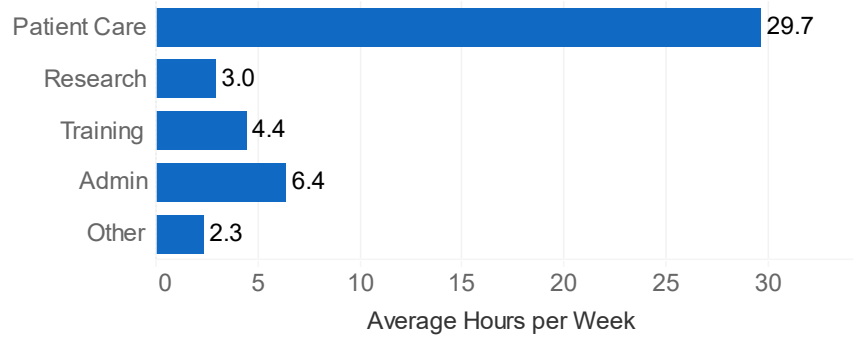
Nearly 95 percent of Medicine professionals are actively working or seeking work. Notable below average metrics include Physician and Surgeons with almost 5 percent already retired and almost 2 percent not working and not seeking work. These metrics will be used in the future to calculate more accurate supply data for each profession.

Active License in CA	Actively Working or Seeking Work	Not Working, Not Seeking Work	Retired
Naturopathic Doctor	96.7%	3.0%	0.3%
Osteopathic Physician and Surgeon	98.8%	0.5%	0.7%
Physician And Surgeon	93.2%	1.9%	4.9%
Physician Assistant	97.1%	2.1%	0.8%
All	94.0%	1.8%	4.1%

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Figure C-5: Full-Time Equivalent Metrics: Medicine

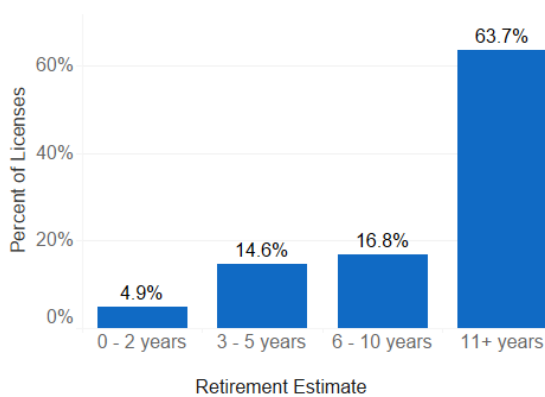
On average, Medicine professionals spend the highest number of hours per week on Patient Care (29.7 hours), and the least amount of time per week on Research (3.0 hours). Notable below average metrics include Naturopathic Doctors with only 19.5 hours per week spent on Patient Care, and notable above average are Osteopathic Physician and Surgeons with 33.3 hours per week spent on Patient Care. These metrics will be used in the future to calculate more accurate patient to provider ratios for each profession, which will lead to more accurate supply and demand modeling.



Active License in CA	Patient Care	Research	Training	Admin	Other*
Naturopathic Doctor	19.5	6.1	5.3	8.6	N/A
Osteopathic Physician and Surgeon	33.3	1.7	5.0	6.7	2.3
Physician And Surgeon	29.2	3.2	4.4	6.5	2.3
Physician Assistant	31.5	2.1	4.5	5.2	N/A
All	29.7	3.0	4.4	6.4	2.3

*Other Activity hours are only asked on surveys administered by the Medical Board of California and Osteopathic Medical Board of California.

Figure C-6: Retirement Estimates: Medicine

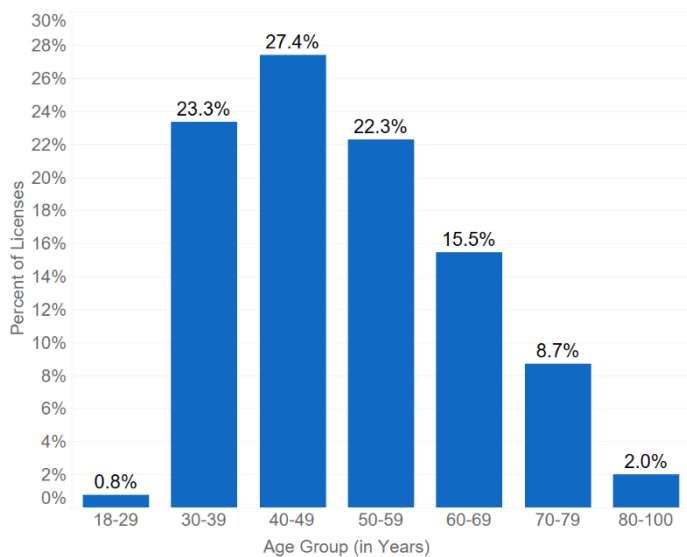


Almost 20 percent of Medicine professionals estimate retiring in the next 5 years, and only 63.7 percent estimate retiring in 11 or more years. Physician and Surgeons are largely driving this trend, with nearly 40 percent estimating retirement by 2033. These metrics will be crucial for calculating more accurate supply and demand models for each profession. In addition, this information may be useful in helping to identify which areas are in most need of funding to maintain the supply of Medicine professionals across the state.

Active License in CA	0-2 Years	3-5 Years	6-10 Years	11+ Years
Naturopathic Doctor	1.5%	4.0%	13.2%	81.2%
Osteopathic Physician and Surgeon	1.4%	5.6%	10.4%	82.6%
Physician And Surgeon	5.5%	16.5%	17.9%	60.2%
Physician Assistant	3.0%	7.4%	13.2%	76.4%
All	4.9%	14.6%	16.8%	63.7%

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Figure C-7: Age Distribution: Medicine

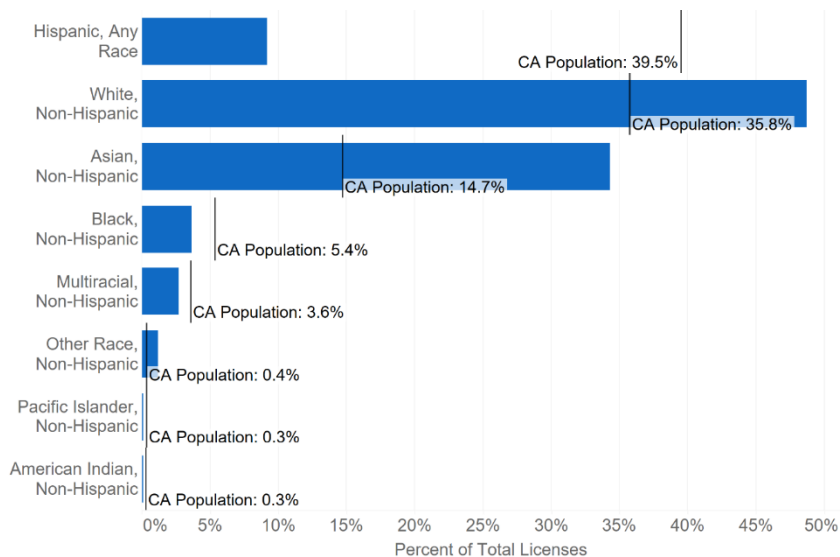


Overall, 26.2 percent of licensees in the Medicine category are 60 years old and over. Approximately 30 percent of Physicians and Surgeons, 12 percent of Physician Assistants, 10 percent of Osteopathic Physicians and Surgeons, and 8 percent of Naturopathic Doctors are 60 years and over.

Active License in CA	18-29	30-39	40-49	50-59	60-69	70-79	80-100
Naturopathic Doctor	1.1%	30.5%	38.0%	22.7%	5.3%	2.2%	0.3%
Osteopathic Physician and Surgeon	0.1%	38.3%	34.4%	16.9%	7.9%	2.2%	0.2%
Physician And Surgeon	0.2%	20.0%	26.9%	23.5%	17.0%	10.1%	2.4%
Physician Assistant	6.1%	39.0%	26.1%	16.8%	9.2%	2.8%	0.1%
All	0.8%	23.3%	27.4%	22.3%	15.5%	8.7%	2.0%

Figure C-8: Race/Ethnicity: Medicine

Hispanic/Latine/x populations are underrepresented overall and in all four Medicine professions. White populations are represented higher overall and in all four Medicine license types, relative to their percentages of the population. Asian populations are represented higher overall, relative to their percentages of the population, but are underrepresented among Naturopathic Doctors. Black populations are underrepresented overall and in all four Medicine professions.



Medicine professions have the lowest representation of Hispanic/Latine/x populations, around 9 percent, out of all the professions highlighted in this report.

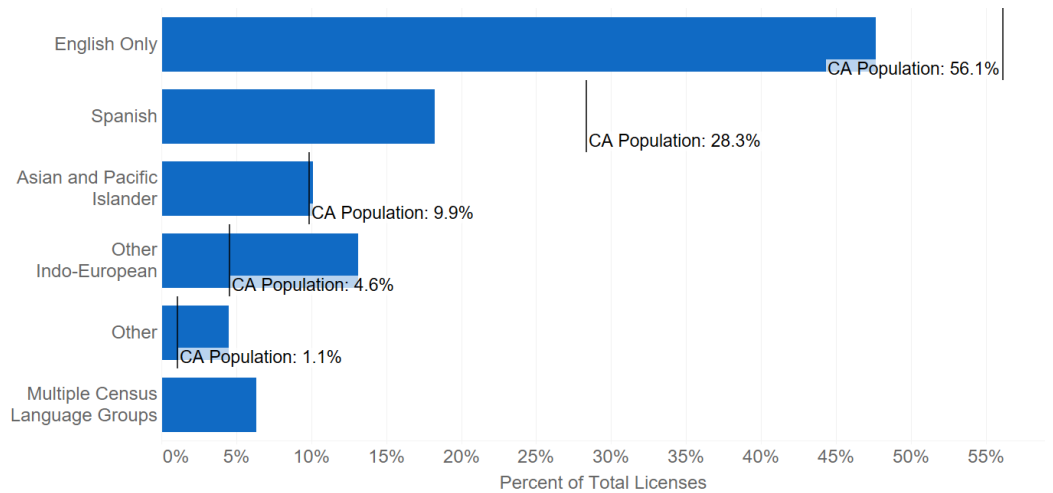
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Active License in CA	American Indian, NH	Asian, NH	Black, NH	Hispanic/Latine/x	Multiracial, NH	Pacific Islander, NH	White, NH	Other Race, NH
Naturopathic Doctor	0.6%	12.4%	2.8%	9.7%	6.2%	N/A	64.1%	4.2%
Osteopathic Physician and Surgeon	0.1%	39.7%	1.6%	5.4%	3.1%	0.2%	48.6%	1.4%
Physician And Surgeon	0.1%	35.6%	3.7%	8.3%	2.5%	<0.1%	48.6%	1.0%
Physician Assistant	0.2%	21.9%	4.6%	17.9%	3.7%	0.5%	49.3%	1.9%
All	0.1%	34.3%	3.6%	9.2%	2.7%	0.1%	48.7%	1.2%

Note: Due to the way individual races/ethnicities were combined, there are levels of nuance within each group that are not captured by these figures.

Figure C-9: Languages Spoken: Medicine

Spanish-speaking populations are underrepresented overall and in all four Medicine license types. Populations who are fluent in Asian and Pacific Islander languages are represented higher overall, relative to their percentages of the population, but are underrepresented among Naturopathic Doctors and



Physician Assistants. Populations who are fluent in Other Indo-European languages are represented higher overall and in all four Medicine professions, relative to their percentages of the population.

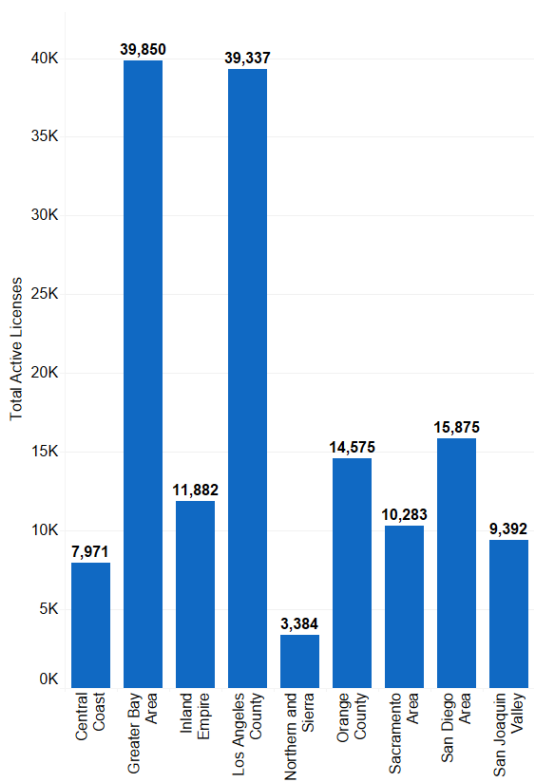
Physicians and Surgeons have the highest proportion of licensees within Medicine who provide services in multiple census language groups.

Active License in CA	Asian and Pacific Islander	English Only	Other Indo-European	Spanish	Multiple Census Language Groups	Other
Naturopathic Doctor	5.0%	66.3%	11.4%	11.2%	2.7%	3.4%
Osteopathic Physician and Surgeon	12.2%	51.5%	10.9%	15.8%	6.2%	3.4%
Physician And Surgeon	10.3%	46.4%	14.1%	17.8%	6.6%	4.8%
Physician Assistant	7.5%	54.9%	6.3%	23.9%	4.4%	2.9%
All	10.1%	47.7%	13.1%	18.3%	6.3%	4.5%

Note: Due to the way individual languages were combined, there are levels of nuance within each group that are not captured by these figures.

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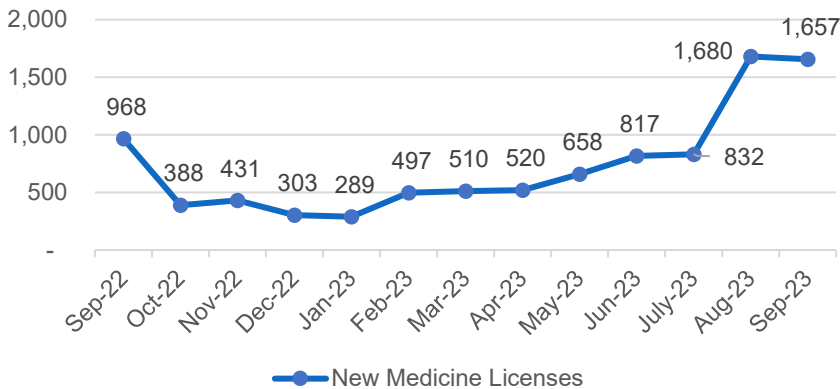
Figure C-10: Active Licenses: Medicine



Physicians are the second largest workforce highlighted in this report, with 126,399 total in-state licenses in active status. The Greater Bay Area and Los Angeles County Regions have the largest total count of Medicine licensees in the state. The Northern and Sierra Region has the lowest count in the state.

Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Naturopathic Doctor	55	203	30	128	21	81	50	213	13
Osteopathic Physician and Surgeon	700	1,848	1,497	2,580	371	1,068	715	1,151	911
Physician And Surgeon	6,246	35,155	8,779	33,259	2,430	11,723	8,578	12,921	7,308
Physician Assistant	970	2,644	1,576	3,370	562	1,703	940	1,590	1,160

Figure C-11: New Licenses: Medicine

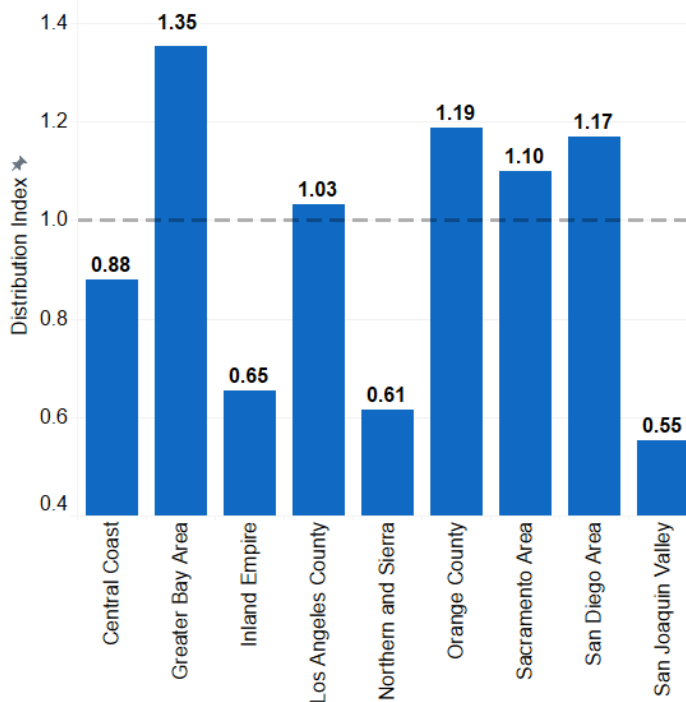


New licenses exhibit a seasonality, with more new licenses recorded in the summer and fall months, coinciding with the conclusion of the academic school year. On average, there were 735 new Medicine licenses added per month from September 2022-September 2023.

Future work will aim to identify trends within each profession, as well as modeling future completions.

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Figure C-12: Distribution Index: Medicine



The distribution index describes the magnitude of difference between a region’s share of the state’s providers and its share of the state’s population. A distribution index of 1 indicates the region has an equal share of the state’s providers and population (e.g., 10 percent of the state’s providers and 10 percent of the state’s population). A distribution index below 1 indicates a smaller share of providers than population (e.g., 5 percent of the state’s providers and 10 percent of the state’s population), and a distribution index greater than 1 indicates the opposite. The further away the index is from 1, the greater the maldistribution.

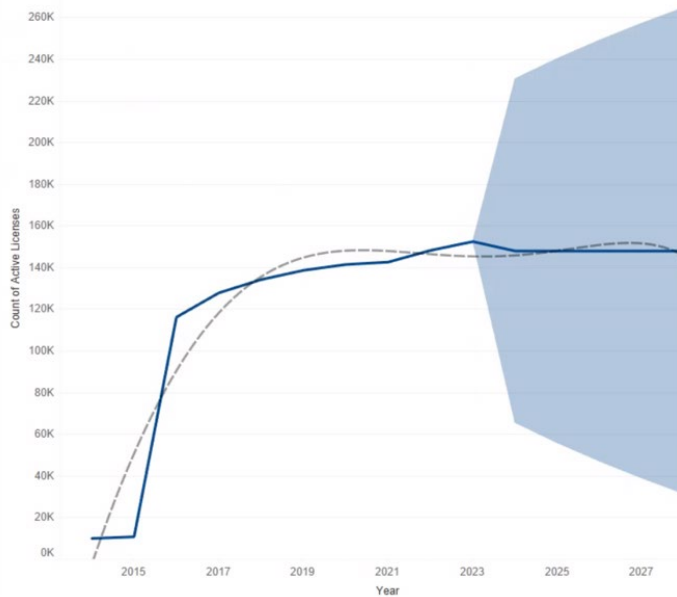
	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Active License in CA									
Naturopathic Doctor	1.17	1.32	0.32	0.64	0.73	1.27	1.03	3.01	0.15
Osteopathic Physician and Surgeon	1.09	0.88	1.16	0.95	0.95	1.22	1.07	1.19	0.76
Physician And Surgeon	0.83	1.44	0.58	1.05	0.53	1.15	1.11	1.15	0.52
Physician Assistant	1.12	0.94	0.91	0.93	1.07	1.46	1.06	1.23	0.72
All	0.88	1.35	0.65	1.03	0.61	1.19	1.10	1.17	0.55

Note: Distribution index values less than or equal to 0.5 (indicating a low license to population ratio) are marked in light blue. Indexes greater than or equal to 1.5 (indicating a high license to population ratio) are marked in dark blue.

Overall, Medicine licenses are fairly well distributed across the state, though there is an extremely high ratio of Naturopathic Doctors in the San Diego Area. The San Joaquin Valley Region has the lowest distribution index across all Medicine license types; the value of 0.55 indicates that the share of the state’s Medicine licenses is nearly half that of the San Joaquin Valley Region’s population.

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Figure C-13: Supply: Medicine



To project supply for the Medicine workforce, a multi-polynomial model with a 95 percent confidence interval was used (Figure C-13). Actual license counts from 2014-2023 were used to predict the years' supply of licenses for 2024-2028.

All professions within Medicine are expected to have an increase in active licenses in the workforce with the exception of Osteopathic Physicians and Surgeons. These predictions were made using a multi-polynomial model with a 95 percent confidence interval.

License Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Naturopathic Doctor	594	582	684	640	674	729	766	709	804	794	821	845	869	894	919
Osteopathic Physician and Surgeon			2,505	5,191	6,556	7,768	8,188	8,781	9,858	10,843	9,912	9,912	9,912	9,912	9,912
Physician And Surgeon			109,555	114,234	116,651	118,765	120,645	120,097	123,793	126,399	127,764	129,749	131,765	133,812	135,890
Physician Assistant	9,482	10,293	3,521	7,878	10,430	11,498	11,954	13,122	13,872	14,515	13,945	14,504	15,063	15,623	16,182
Total	10,076	10,875	116,265	127,943	134,311	138,760	141,553	142,709	148,327	152,551	152,442	155,010	157,609	160,241	162,903

Note: Cells shaded in light blue are predictions based on the Workforce Supply Model (see Figure C-13).

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Appendix D: Nursing, All Figures

This section focuses on licenses issued by the California Board of Registered Nursing (Registered Nurse) and Board of Vocational Nursing and Psychiatric Technicians (Vocational Nurse, Psychiatric Technician).

Figure D-1: Education Pipeline: Nursing

Over the last ten years there has not been a statistically significant change in the number of Nursing programs offered. However, there has been a slight decrease in the number of Institutions offering Nursing programs, and a significant increase in the number of individuals completing Nursing programs (13.1 percent). This suggests there may be future increases in the number of individuals applying for licensure. Future work will aim to identify trends within each profession, as well as modeling future completion metrics to better understand potential workforce supply.

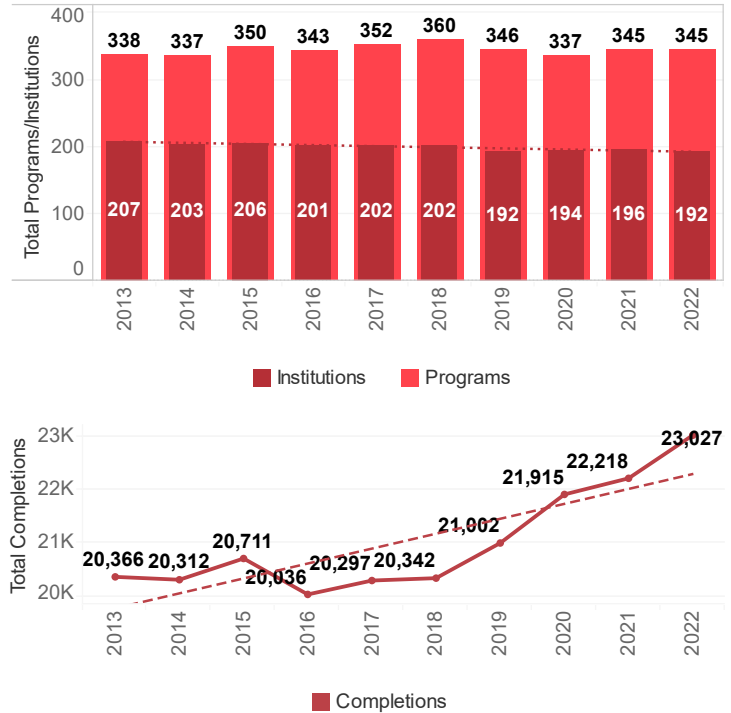
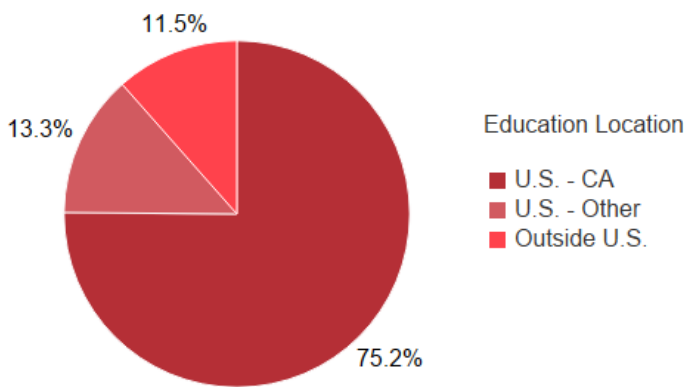


Figure D-2: Education Location: Nursing

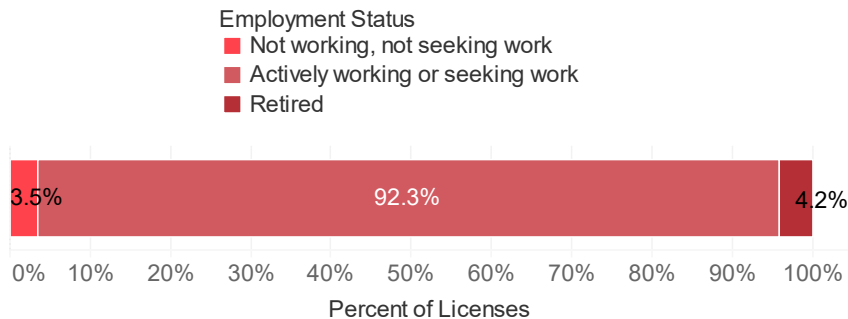


Nearly 90 percent of Nursing professionals complete their education in the U.S., but only 75.2 percent receive their initial qualifying degree within California. Notable below average metrics include Registered Nurses with only 85.7 percent receiving their initial qualifying degree in the U.S., and 14.3 percent receiving their initial qualifying degree in from somewhere outside the U.S. Future work will aim to use this information in conjunction with education pipeline data to better understand potential workforce supply.

Active License in CA	U.S. – CA	U.S. – Other	Outside U.S.
Public Health Nurse	92.3%	5.6%	2.1%
Registered Nurse	69.1%	16.6%	14.3%
Vocational Nurse	91.5%	3.5%	4.9%
All	75.2%	13.3%	11.5%

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Figure D-3: Employment Status: Nursing

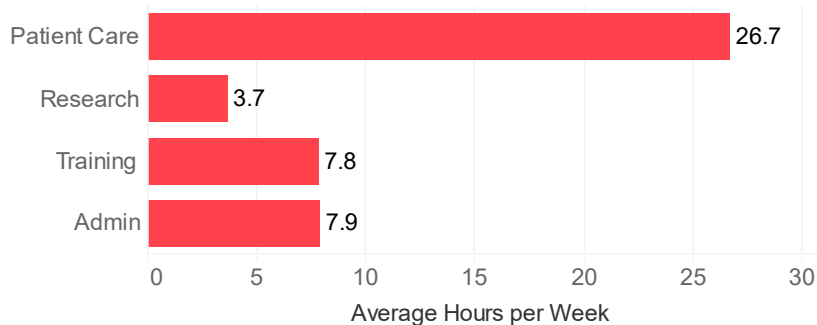


Among Nursing professionals, 92.3 percent are actively working or seeking work. Notable below average metrics include Public Health Nurses with nearly 6 percent already retired and 4.9 percent of Vocational Nurses not working and not seeking work. These data are important and will be used in the future to calculate more accurate supply metrics.

Active License in CA	Actively Working or Seeking Work	Not Working, Not Seeking Work	Retired
Public Health Nurse	90.6%	3.5%	5.9%
Registered Nurse	92.2%	3.1%	4.7%
Vocational Nurse	93.6%	4.9%	1.5%
All	92.3%	3.5%	4.2%

Figure D-4: Full-Time Equivalent Metrics: Nursing

On average, Nursing professionals spend the highest number of hours per week on Patient Care (26.7 hours), and the least amount of time per week on Research (3.7 hours). Notable below average metrics include Public Health Nurses with only 23.7 hours per week spent on Patient Care, and Vocational Nurses with 6.1 hours per week spent on Research. These metrics will be used in the future to calculate more accurate patient to provider ratios for each profession, which will lead to more accurate supply and demand modeling.

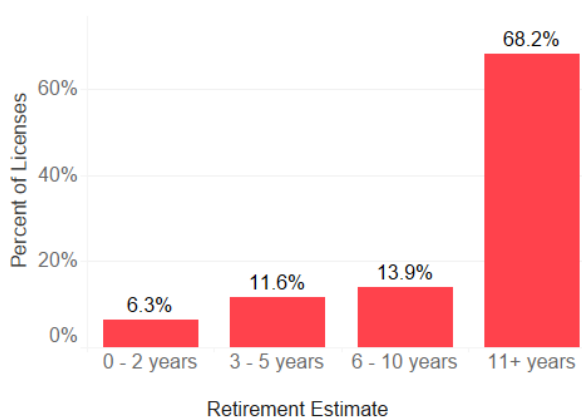


These metrics will be used in the future to calculate more accurate patient to provider ratios for each profession, which will lead to more accurate supply and demand modeling.

Active License in CA	Patient Care	Research	Training	Admin
Public Health Nurse	23.7	4.0	8.2	10.3
Registered Nurse	26.2	3.1	7.1	6.9
Vocational Nurse	30.1	6.1	10.8	11.0
All	26.7	3.7	7.8	7.9

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Figure D-5: Retirement Estimates: Nursing

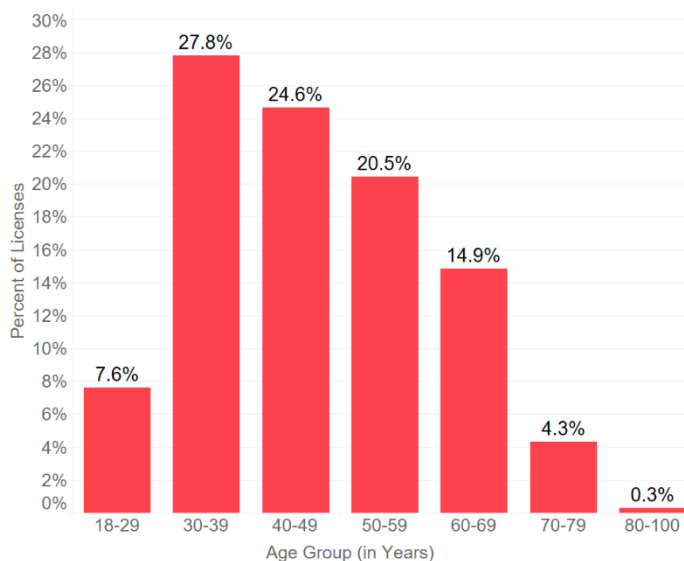


Almost 18 percent of Nursing professionals estimate retiring in the next 5 years, and 68.2 percent estimate retiring in 11 or more years. By 2033, nearly a third of Public Health Nurses and Registered nurses estimate being retired. These metrics will be crucial for calculating more accurate supply and demand models for each profession. In addition, this information may be useful in helping to identify which areas are in most need of funding to maintain the supply of Nursing professionals across the state.

Active License in CA	0-2 Years	3-5 Years	6-10 Years	11+ Years
Public Health Nurse	7.8%	13.8%	15.5%	62.9%
Registered Nurse	6.9%	12.2%	14.2%	66.7%
Vocational Nurse	3.2%	8.4%	11.9%	76.5%
All	6.3%	11.6%	13.9%	68.2%

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Figure D-6: Age Distribution: Nursing

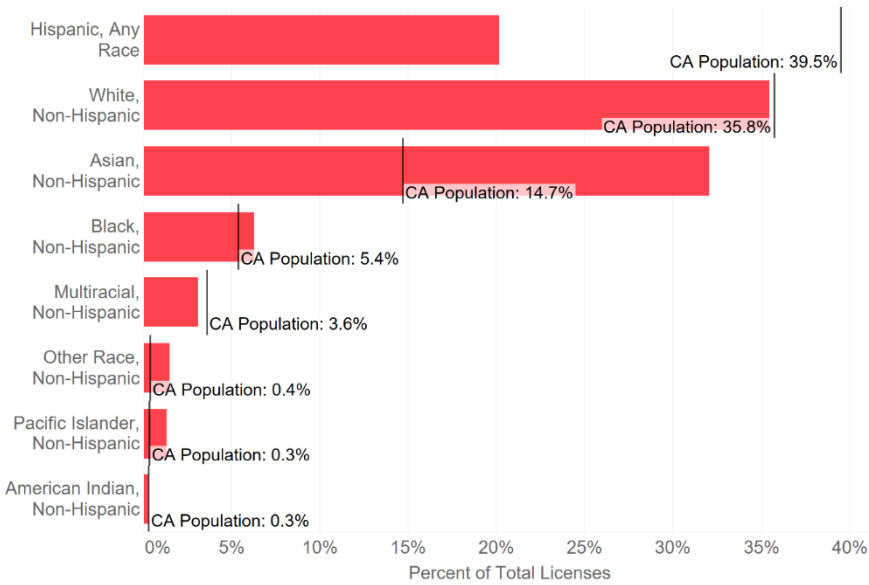


Overall, 19.5 percent of licensees in the Nursing category are 60 years old and over. Around 24 percent of Public Health Nurses, 20 percent of Registered Nurses, and 14 percent of Vocational Nurses are 60 years and over.

Active License in CA	18-29	30-39	40-49	50-59	60-69	70-79	80-100
Public Health Nurse	4.6%	25.2%	25.3%	21.0%	17.6%	5.9%	0.4%
Registered Nurse	7.4%	27.2%	24.3%	20.8%	15.4%	4.6%	0.4%
Vocational Nurse	9.8%	31.4%	25.7%	18.9%	11.4%	2.6%	0.2%
All	7.6%	27.8%	24.6%	20.5%	14.9%	4.3%	0.3%

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Figure D-7: Race/Ethnicity: Nursing



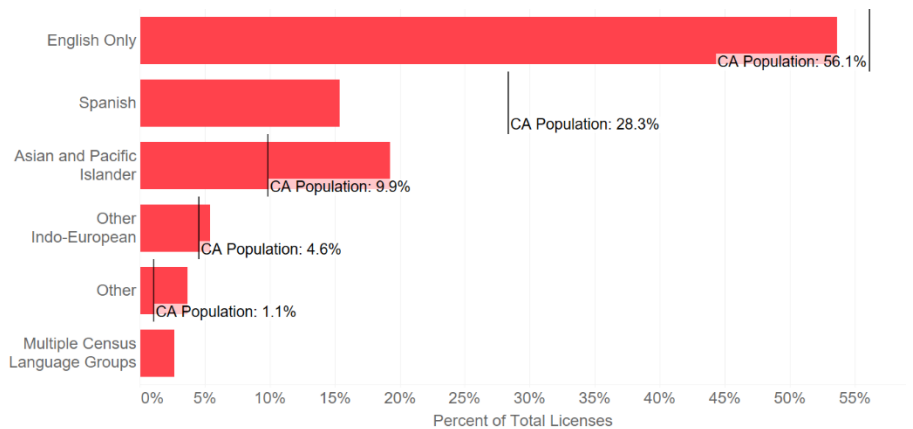
Hispanic/Latine/x populations are underrepresented overall and in all three Nursing license types. White populations are underrepresented overall and among Vocational Nurses. Asian populations are represented higher overall and in all three Nursing professions, relative to their percentages of the population. Black populations are represented higher overall, relative to their percentages of the population, but are underrepresented among Registered Nurses.

Active License in CA	American Indian, NH	Asian, NH	Black, NH	Hispanic/Latine/x	Multiracial, NH	Pacific Islander, NH	White, NH	Other Race, NH
Public Health Nurse	0.2%	25.6%	7.6%	19.4%	3.6%	1.0%	41.2%	1.4%
Registered Nurse	0.2%	33.2%	5.0%	16.7%	3.0%	1.2%	39.3%	1.4%
Vocational Nurse	0.4%	30.3%	10.5%	33.8%	3.0%	1.7%	18.6%	1.7%
All	0.2%	32.0%	6.2%	20.2%	3.1%	1.3%	35.5%	1.5%

Note: Due to the way individual races/ethnicities were combined, there are levels of nuance within each group that are not captured by these figures.

Figure D-8: Languages Spoken: Nursing

Spanish-speaking populations are underrepresented overall and in all three Nursing license types. Populations who are fluent in Asian and Pacific Islander languages are represented higher overall and among all three Nursing professions, relative to their percentages of the population. Populations who are fluent in Other Indo-European languages are represented higher overall and among all three Nursing license types, relative to their percentages of the population.



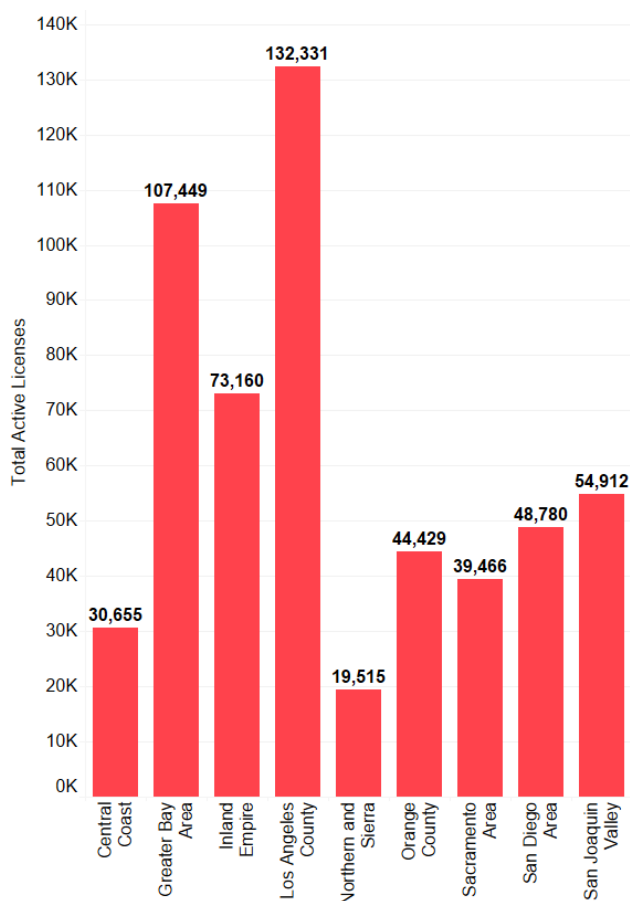
Nursing professions have the lowest representation of Spanish-speaking populations, around 15 percent, out of all the professions highlighted in this report.

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Active License in CA	Asian and Pacific Islander	English Only	Other Indo-European	Spanish	Multiple Census Language Groups	Other
Public Health Nurse	12.2%	60.1%	5.0%	16.8%	2.6%	3.4%
Registered Nurse	19.9%	55.4%	5.4%	13.1%	2.7%	3.6%
Vocational Nurse	19.6%	44.4%	5.6%	23.6%	2.7%	4.1%
All	19.2%	53.6%	5.4%	15.4%	2.7%	3.7%

Note: Due to the way individual languages were combined, there are levels of nuance within each group that are not captured by these figures.

Figure D-9: Active Licenses: Nursing

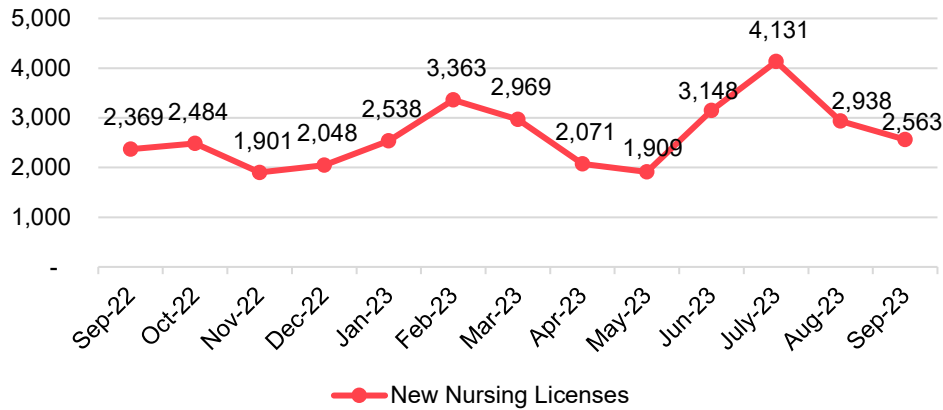


Registered Nurses are the largest workforce highlighted in this report with 407,401 active licenses in the state. The Los Angeles County Region has the highest count of Nursing licenses while the Northern and Sierra Region has the lowest.

Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Public Health Nurse	2,359	8,920	4,311	9,497	1,540	3,347	2,742	2,953	3,440
Registered Nurse	23,917	83,768	50,264	91,948	14,366	34,047	31,438	38,804	38,849
Vocational Nurse	4,379	14,761	18,585	30,886	3,609	7,035	5,286	7,023	12,623

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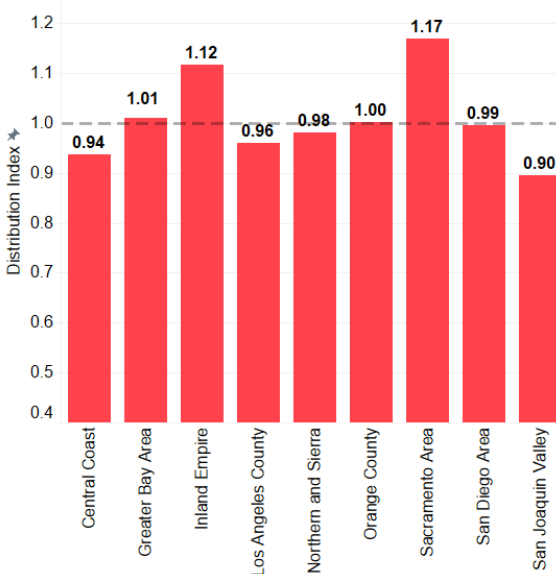
Figure D-10: New Licenses: Nursing



New licenses exhibit a seasonality, with more new licenses recorded in the summer and fall months and from February to March, coinciding with the conclusion of the academic school year summer and winter semesters. On average, there were 2,649 new Nursing licenses added per month from September 2022-September 2023.

Future work will aim to identify trends within each profession, as well as modeling future completions.

Figure D-11: Distribution Index: Nursing



The distribution index describes the magnitude of difference between a region’s share of the state’s providers and its share of the state’s population. A distribution index of 1 indicates the region has an equal share of the state’s providers and population (e.g., 10 percent of the state’s providers and 10 percent of the state’s population). A distribution index below 1 indicates a smaller share of providers than population (e.g., 5 percent of the state’s providers and 10 percent of the state’s population), and a distribution index greater than 1 indicates the opposite. The further away the index is from 1, the greater the maldistribution.

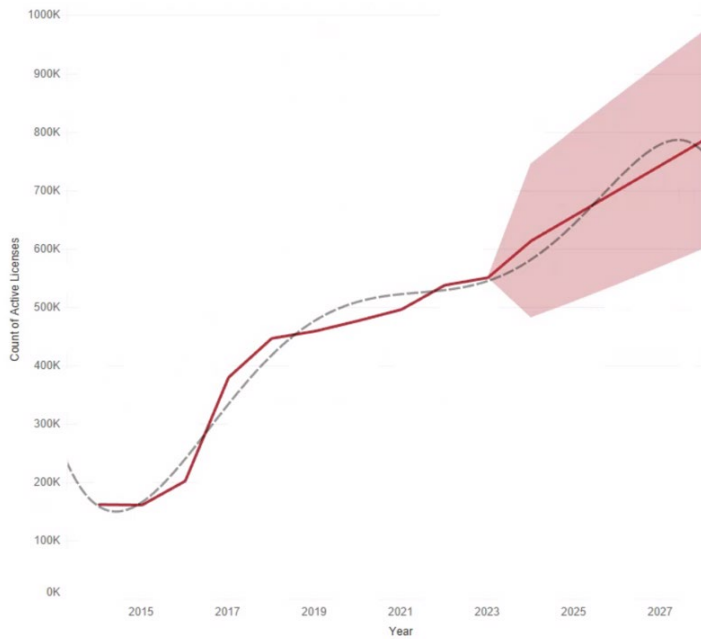
The table shows that nurses are well distributed across the state, with the lowest overall distribution at only 0.90 in the San Joaquin Valley Region and the highest at 1.17 in the Sacramento Area Region.

	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Active License in CA									
Public Health Nurse	1.01	1.18	0.93	0.97	1.09	1.06	1.14	0.85	0.79
Registered Nurse	0.99	1.06	1.04	0.90	0.98	1.04	1.26	1.07	0.86
Vocational Nurse	0.71	0.73	1.50	1.19	0.96	0.84	0.83	0.76	1.09
All	0.94	1.01	1.12	0.96	0.98	1.00	1.17	0.99	0.90

Note: Distribution index values less than or equal to 0.5 (indicating a low license to population ratio) are marked in light red. Indexes greater than or equal to 1.5 (indicating a high license to population ratio) are marked in dark red.

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Figure D-12: Supply: Nursing



To project supply for the Nursing workforce, a multi-polynomial model with a 95 percent confidence interval was used (Figure D-12). Actual license counts from 2014-2023 were used to predict the years' supply of licenses for 2024-2028.

All professions within Nursing are expected to have an increase in active licenses in the workforce with the exceptions of Public Health Nurses and Vocational Nurses. These predictions were made using a multi-polynomial model with a 95 percent confidence interval.

License Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Public Health Nurse	58,431	59,910	55,512	54,691	42,072	18,782	30,759	34,659	38,595	39,109	37,576	37,576	37,576	37,576	37,576
Registered Nurse	103,554	101,339	116,108	254,121	314,773	346,237	352,044	364,224	396,481	407,401	456,457	490,217	523,978	557,739	591,500
Vocational Nurse			30,765	70,974	89,957	93,982	94,071	97,333	102,743	104,187	101,121	101,121	101,121	101,121	101,121
Total	161,985	161,249	202,385	379,786	446,802	459,001	476,874	496,216	537,819	550,697	595,154	628,914	662,675	696,436	730,197

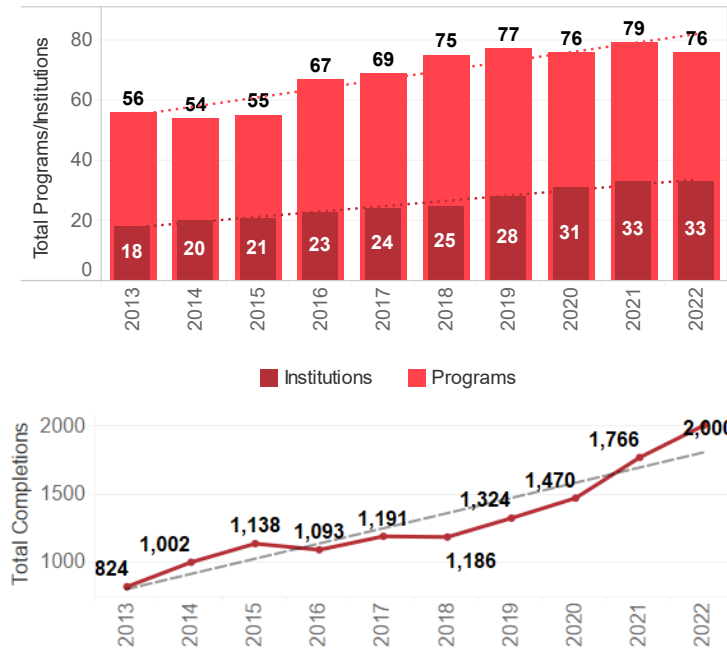
Note: Cells shaded in light red are predictions based on the Workforce Supply Model (see Figure D-12).

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Appendix E: Advanced Practice Nursing, All Figures

This section focuses on licenses issued by the California Board of Registered Nursing (Clinical Nurse Specialist, Nurse Anesthetist, Nurse Midwife, Nurse Practitioner) and the Medical Board of California (Licensed Midwife).

Figure E-1: Education Pipeline: Advanced Practice Nursing

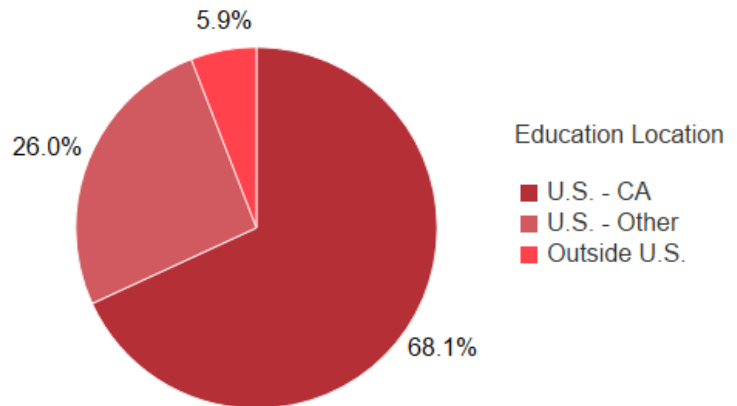


Over the last ten years there has been a statistically significant increase in the number of Institutions offering Advanced Practice Nursing programs (35.7 percent), the number of Programs offered (83.3 percent), and the number of individuals completing Advanced Practice Nursing programs in California (142.7 percent). This suggests there may be future increases in the number of individuals applying for licensure. Future work will aim to identify trends within each profession, as well as modeling future completion metrics to better understand potential workforce supply.

Note: Licensed Midwife and Nurse Midwife missing from IPEDS data

Figure E-2: Education Location: Advanced Practice Nursing

Nearly 95 percent of Advanced Practice Nursing professionals complete their education in the U.S., but only 68.1 percent receive their initial qualifying degree within California. Notable below average metrics include Nurse Anesthetists with over 45 percent receiving their initial qualifying degree outside California, and 6.3 percent of Nurse Practitioners receiving their initial qualifying degree from somewhere outside the U.S. Future work will aim to use this information in conjunction with education pipeline data to better understand potential workforce supply.

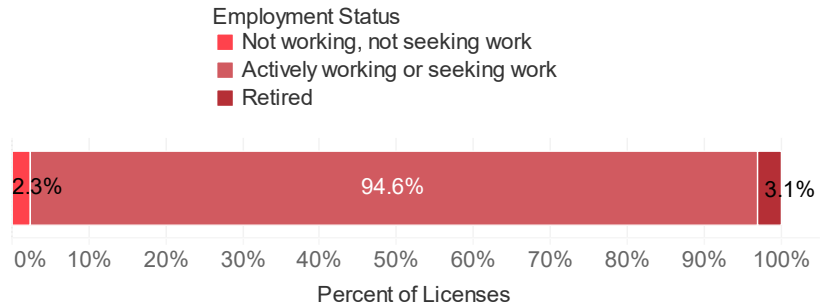


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Active License in CA	U.S. - CA	U.S. - Other	Outside U.S.
Clinical Nurse Specialist	72.9%	21.5%	5.6%
Licensed Midwife	79.1%	20.9%	N/A
Nurse Anesthetist	54.6%	43.2%	2.2%
Nurse Midwife	60.8%	35.8%	3.4%
Nurse Practitioner	69.0%	24.8%	6.3%
All	68.1%	26.0%	5.9%

Figure E-3: Employment Status: Advanced Practice Nursing

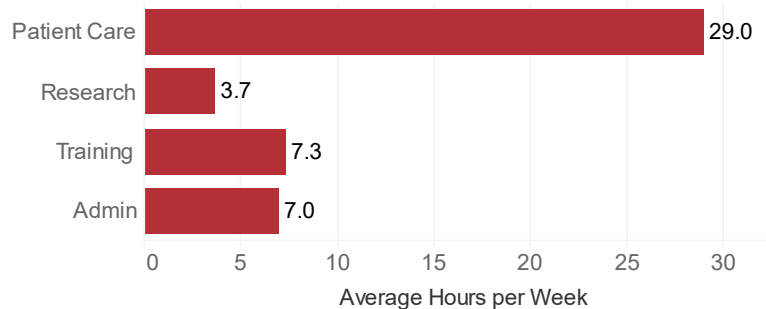
Nearly 95 percent of Advanced Practice Nursing professionals are actively working or seeking work. Notable below average Metrics include Clinical Nurse Specialists with 8.1 percent already retired and 8.7 percent of Nurse Midwives not actively working or seeking work. These metrics will be used in the future to calculate more accurate supply data for each profession.



Active License in CA	Actively Working or Seeking Work	Not Working, Not Seeking Work	Retired
Clinical Nurse Specialist	88.7%	3.2%	8.1%
Licensed Midwife	94.9%	2.5%	2.5%
Nurse Anesthetist	98.2%	0.8%	1.1%
Nurse Midwife	91.3%	3.6%	5.1%
Nurse Practitioner	95.1%	2.3%	2.7%
All	94.6%	2.3%	3.1%

Figure E-4: Full-Time Equivalent Metrics: Advanced Practice Nursing

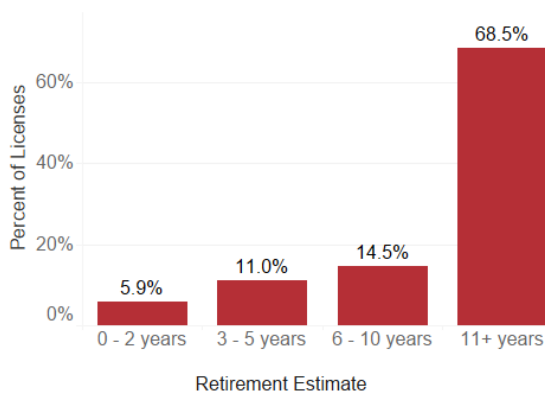
On average, Advanced Practice Nursing professionals spend the highest number of hours per week on Patient Care (29.0 hours), and the least amount of time per week on Research (3.7 hours). Notable below average metrics include Licensed Midwives with only 13.2 hours per week spent on Patient Care, and Clinical Nurse Specialists with 12.5 hours per week spent on Admin activities. These metrics will be used in the future to calculate more accurate patient to provider ratios for each profession, which will lead to more accurate supply and demand modeling.



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Active License in CA	Patient Care	Research	Training	Admin
Clinical Nurse Specialist	18.2	5.5	10.5	12.5
Licensed Midwife	13.2	2.9	2.7	5.6
Nurse Anesthetist	33.7	2.0	6.6	3.4
Nurse Midwife	27.7	1.6	6.3	5.2
Nurse Practitioner	29.6	3.7	7.2	6.8
All	29.0	3.7	7.3	7.0

Figure E-5: Retirement Estimates: Advanced Practice Nursing

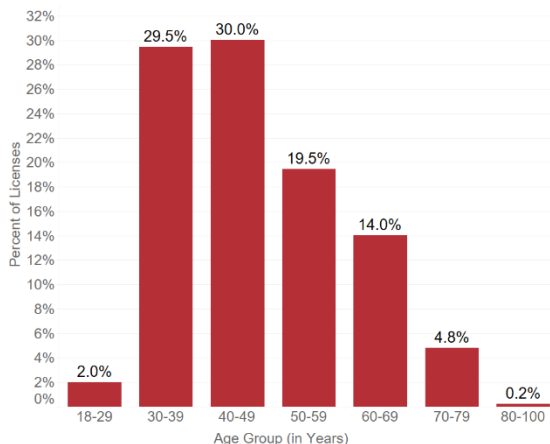


Almost 17 percent of Advanced Practice Nursing professionals estimate retiring in the next 5 years, and only 68.5 percent estimate retiring in 11 or more years. Clinical Nurse Specialists are largely driving this trend, with over 50 percent estimating retirement by 2033 and over 40 percent of Nurse Midwives estimating retirement by 2033. These metrics will be crucial for calculating more accurate supply and demand models for each profession. In addition, this information may be useful in helping to identify which areas are in most need of funding to maintain the supply of Advanced Practice Nursing professionals across the state.

Active License in CA	0-2 Years	3-5 Years	6-10 Years	11+ Years
Clinical Nurse Specialist	12.1%	18.9%	19.8%	49.2%
Licensed Midwife	0.0%	6.3%	2.4%	91.2%
Nurse Anesthetist	4.7%	11.7%	14.5%	69.1%
Nurse Midwife	11.7%	14.5%	16.8%	57.1%
Nurse Practitioner	5.2%	10.1%	14.0%	70.7%
All	5.9%	11.0%	14.5%	68.5%

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Figure E-6: Age Distribution: Advanced Practice Nursing



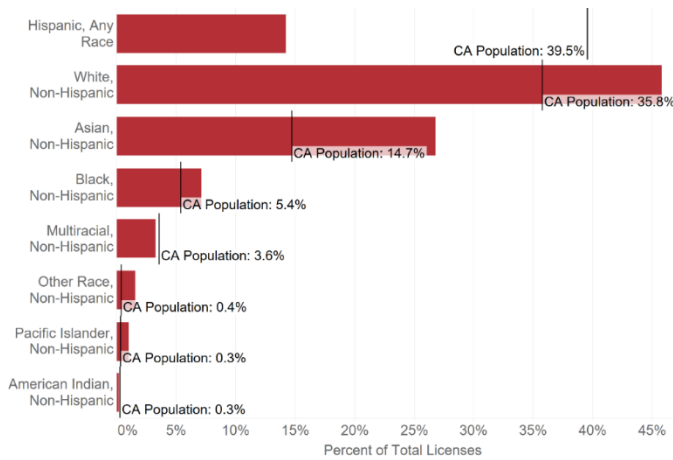
Overall, 19 percent of licensees in the Advanced Practice Nursing category are 60 years old and over.

Approximately 36 percent of Clinical Nurse Specialists, 27 percent of Nurse Midwives, 18 percent of Nurse Practitioners, 14 percent of Nurse Anesthetists, and 13 percent of Licensed Midwives are 60 and over.

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Active License in CA	18-29	30-39	40-49	50-59	60-69	70-79	80-100
Clinical Nurse Specialist	0.1%	11.6%	30.7%	21.9%	25.1%	9.9%	0.7%
Licensed Midwife	N/A	28.9%	33.3%	24.4%	11.1%	2.2%	N/A
Nurse Anesthetist	1.2%	32.4%	33.4%	19.4%	10.8%	2.6%	0.1%
Nurse Midwife	1.1%	23.6%	27.2%	20.7%	19.2%	8.2%	N/A
Nurse Practitioner	2.3%	31.1%	29.8%	19.2%	13.1%	4.4%	0.2%
All	2.0%	29.5%	30.0%	19.5%	14.0%	4.8%	0.2%

Figure E-7: Race/Ethnicity: Advanced Practice Nursing



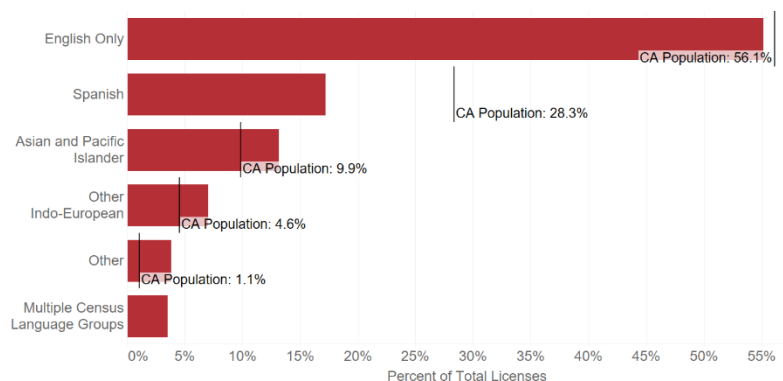
Hispanic/Latine/x populations are underrepresented overall and in all five Advanced Practice Nursing professions. White populations are represented higher overall and in all five Advanced Practice Nursing license types, relative to their percentages of the population. Asian populations are represented higher overall, relative to their percentages of the population, but are underrepresented among Licensed Midwives and Nurse Midwives. Black populations are represented higher overall, relative to their percentages of the population, but are underrepresented among Nurse Anesthetists.

Active License in CA	American Indian, NH	Asian, NH	Black, NH	Hispanic/Latine/x	Multiracial, NH	Pacific Islander, NH	White, NH	Other Race, NH
Clinical Nurse Specialist	0.4%	21.5%	6.2%	11.4%	2.9%	0.7%	55.3%	1.5%
Licensed Midwife	N/A	7.8%	N/A	20.2%	3.4%	N/A	68.5%	N/A
Nurse Anesthetist	N/A	22.2%	3.8%	12.2%	4.0%	1.0%	54.7%	2.2%
Nurse Midwife	0.3%	4.8%	5.9%	13.8%	3.7%	0.2%	70.0%	1.3%
Nurse Practitioner	0.2%	28.6%	7.5%	14.7%	3.3%	1.1%	43.2%	1.5%
All	0.2%	26.8%	7.1%	14.2%	3.3%	1.0%	45.8%	1.6%

Note: Due to the way individual races/ethnicities were combined, there are levels of nuance within each group that are not captured by these figures.

Figure E-8: Languages Spoken: Advanced Practice Nursing

Spanish-speaking populations are underrepresented overall and in four out of the five Advanced Practice Nursing license types. Populations who are fluent in Asian and Pacific Islander languages are represented higher overall, relative to their percentages of the population, but are underrepresented in three out of the five Advanced Practice Nursing professions. Populations who are fluent in Other Indo-European languages are



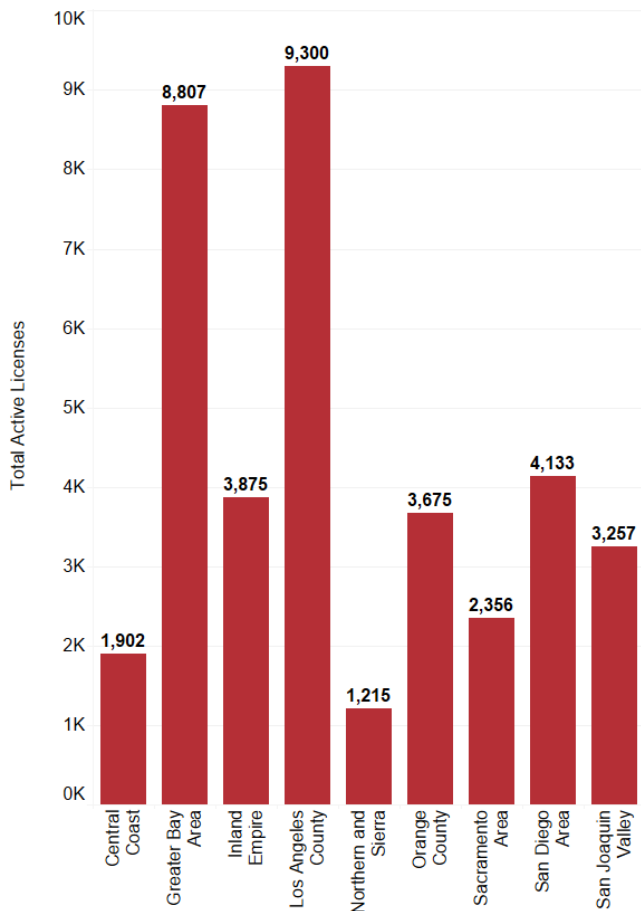
represented higher overall, relative to their percentages of the population, but are underrepresented among Clinical Nurse Specialists.

Active License in CA	Asian and Pacific Islander	English Only	Other Indo-European	Spanish	Multiple Census Language Groups	Other
Clinical Nurse Specialist	11.4%	68.8%	3.9%	11.0%	2.0%	2.9%
Licensed Midwife	1.9%	71.1%	7.3%	13.0%	2.3%	4.3%
Nurse Anesthetist	7.6%	70.6%	5.1%	12.7%	2.3%	1.7%
Nurse Midwife	2.9%	51.8%	4.9%	34.2%	3.7%	2.5%
Nurse Practitioner	14.2%	52.9%	7.6%	17.4%	3.8%	4.1%
All	13.2%	55.2%	7.0%	17.2%	3.5%	3.8%

Note: Due to the way individual languages were combined, there are levels of nuance within each group that are not captured by these figures.

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Figure E-9: Active Licenses: Advanced Practice Nursing



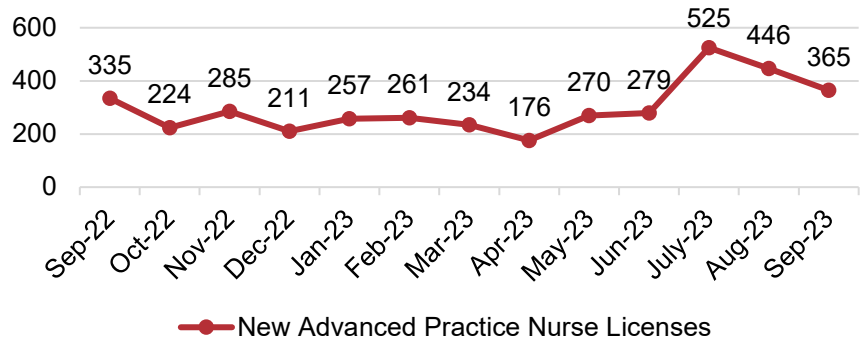
Nurse Practitioners are the largest Advanced Practice Nursing group, representing nearly 82 percent of active Advanced Practice Nursing licenses. Los Angeles County has the largest amount of Advanced Practice Nursing licenses, followed closely by the Greater Bay Area Region. The Northern and Sierra Region has the lowest number of Advanced Practice Nursing licenses overall.

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Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Clinical Nurse Specialist	121	985	204	570	26	196	158	439	160
Licensed Midwife	64	98	36	62	71	22	36	55	10
Nurse Anesthetist	88	499	288	556	64	227	228	243	211
Nurse Midwife	99	410	75	202	67	99	78	147	72
Nurse Practitioner	1,530	6,815	3,272	7,910	987	3,131	1,856	3,249	2,804

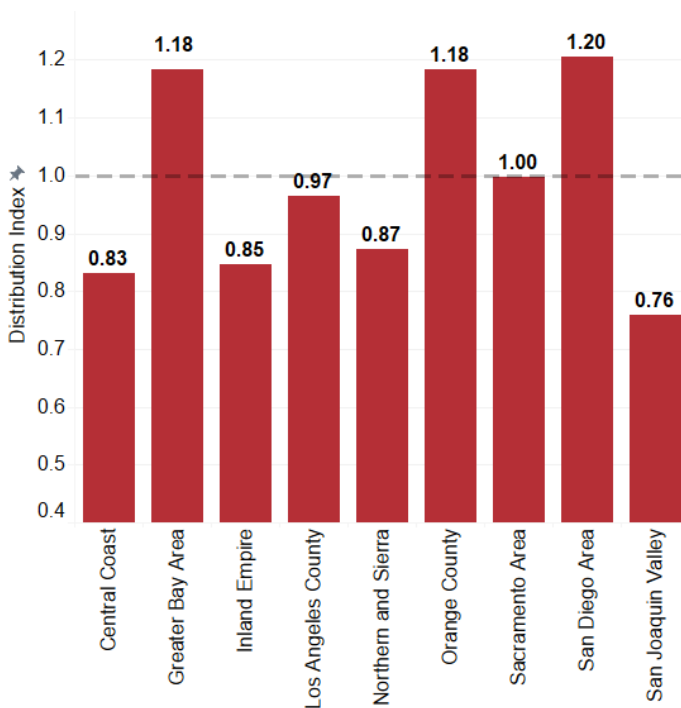
Figure E-10: New Licenses: Advanced Practice Nursing

New licenses exhibit a seasonality, with more new licenses recorded in the summer and fall months coinciding with the conclusion of the academic school year. On average, there were 298 new Advanced Practice Nursing licenses added per month from September 2022-September 2023.



Future work will aim to identify trends within each profession, as well as modeling future completions.

Figure E-11: Distribution Index: Advanced Practice Nursing



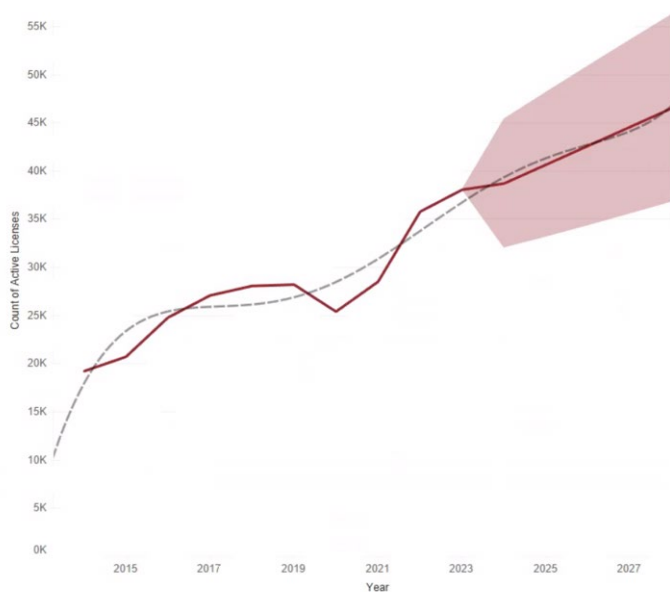
Rates of Licensed Midwives are highly concentrated relative to the population in two of the nine regions (Central Coast and Northern and Sierra). Nurse Practitioners are well distributed across the entire state relative to the regional populations. The San Joaquin Valley Region has the smallest share of all Advanced Practice Nursing licenses with an overall distribution index of 0.76. Specifically, the region has half the amount of Clinical Nurse Specialists and less than half the amount of Licensed Midwives they should have based on population.

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Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Clinical Nurse Specialist	0.71	1.78	0.60	0.80	0.25	0.85	0.90	1.72	0.50
Licensed Midwife	2.37	1.12	0.67	0.55	4.33	0.60	1.29	1.36	0.20
Nurse Anesthetist	0.62	1.07	1.01	0.92	0.74	1.17	1.55	1.13	0.79
Nurse Midwife	1.33	1.70	0.50	0.65	1.48	0.98	1.02	1.32	0.52
Nurse Practitioner	0.82	1.12	0.87	1.00	0.87	1.23	0.96	1.16	0.80
All	0.83	1.18	0.85	0.97	0.87	1.18	1.00	1.20	0.76

Note: Distribution index values less than or equal to 0.5 (indicating a low license to population ratio) are marked in light red. Indexes greater than or equal to 1.5 (indicating a high license to population ratio) are marked in dark red.

Figure E-12: Supply: Advanced Practice Nursing



To project supply for the Advanced Practice Nursing workforce, a multi-polynomial model with a 95 percent confidence interval was used (Figure E-12). Actual license counts from 2014-2023 were used to predict the years' supply of licenses for 2024-2028.

All professions within Advanced Practice Nursing are expected to have a decrease in active licenses in the workforce with the exception of Nurse Anesthetist. These predictions were made using a multi-polynomial model with a 95 percent confidence interval.

License Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Clinical Nurse Specialist			3,302	3,222	3,139	3,042	2,991	2,882	2,931	2,859	2,800	2,749	2,700	2,652	2,604
Licensed Midwife			1,895	1,950	1,990	2,052	2,100	2,126	2,274	2,404	2,433	2,510	2,589	2,671	2,755
Nurse Anesthetist				1,169	1,160	1,157	1,175	1,163	1,240	1,249	1,226	1,226	1,226	1,226	1,226
Nurse Midwife	19,234	20,731	19,603	20,753	21,793	21,972	19,151	22,355	29,341	31,554	28,448	28,448	28,448	28,448	28,448
Total	19,234	20,731	24,800	27,094	28,082	28,223	25,417	28,526	35,786	38,066	34,907	34,933	34,963	34,997	35,033

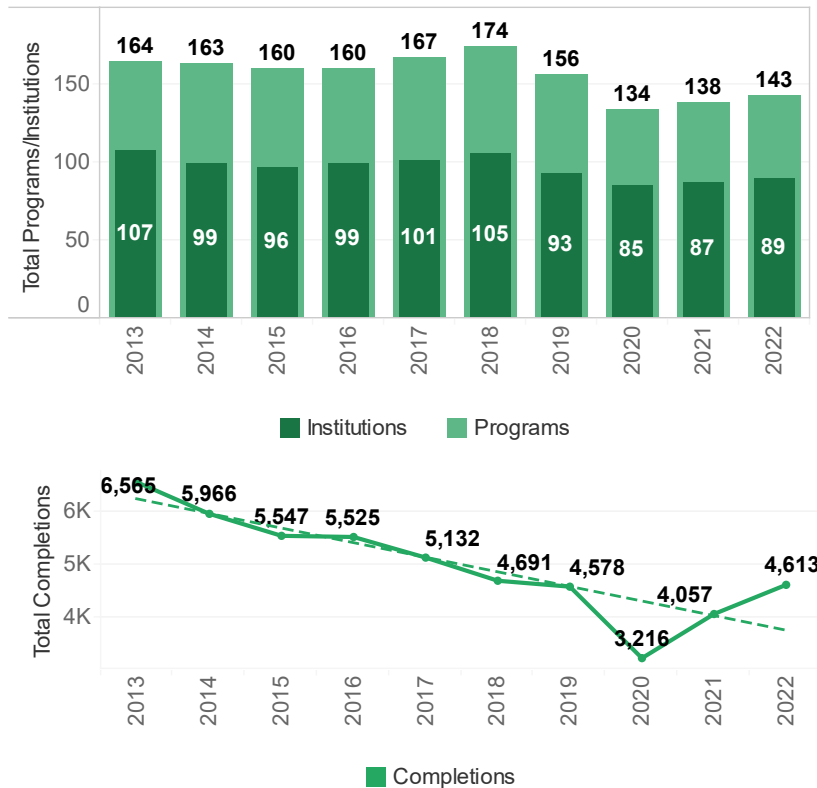
Note: Cells shaded in light red are predictions based on the Workforce Supply Model (see Figure E-12).

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Appendix F: Oral Health, All Figures

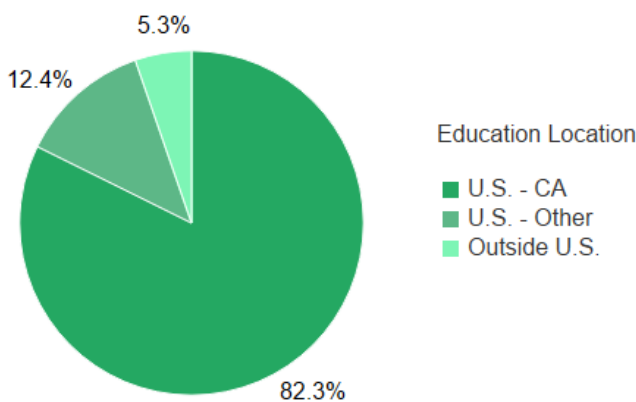
This section focuses on licenses issued by the Dental Board of California (Dentist) and the Dental Hygiene Board of California (Orthodontic Assistant, RDA in Extended Functions, RDH Alternative Practice, RDH in Extended Functions, Registered Dental Assistant, Registered Dental Hygienist).

Figure F-1: Education Pipeline: Oral Health



Over the last ten years there has not been a statistically significant change in the number of institutions offering Oral Health programs, or the number of programs offered in California. However, there has been a statistically significant decrease (29.7 percent) in the number of individuals completing those programs. This suggests there may be future decreases in the number of individuals applying for licensure; however, this trend may reverse if the increase in completions over the last two years continues. Future work will aim to identify trends within each profession, as well as modeling future completion metrics to better understand potential workforce supply.

Figure F-2: Education Location: Oral Health

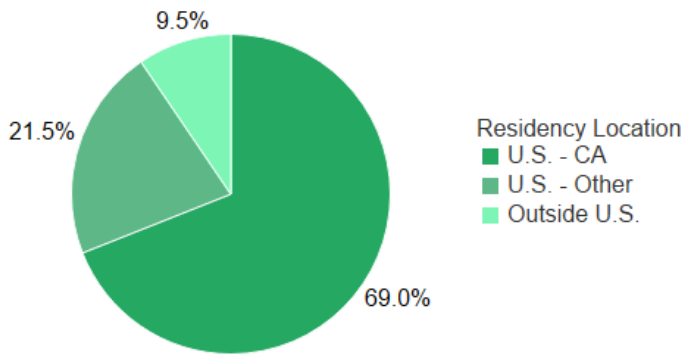


Nearly 95 percent of Oral Health professionals complete their education in the U.S., with over 82 percent receiving their initial qualifying degree within California. Outliers include Dentists with only 67.1 percent receiving their initial qualifying degree in California, and 10.4 percent receiving their initial qualifying degree from outside the U.S. Future work will aim to use this information in conjunction with education pipeline data to better understand potential workforce supply.

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Active License in CA	U.S. - CA	U.S. - Other	Outside U.S.
Dentist	67.1%	22.5%	10.4%
Orthodontic Assistant	95.6%	1.4%	3.0%
RDA in Extended Functions	94.1%	2.1%	3.8%
RDH Alternative Practice	87.3%	12.4%	0.3%
RDH in Extended Functions	87.5%	12.5%	N/A
Registered Dental Assistant	96.0%	1.6%	2.4%
Registered Dental Hygienist	87.9%	11.7%	0.4%
All	82.3%	12.4%	5.3%

Figure F-3: Residency Location: Oral Health

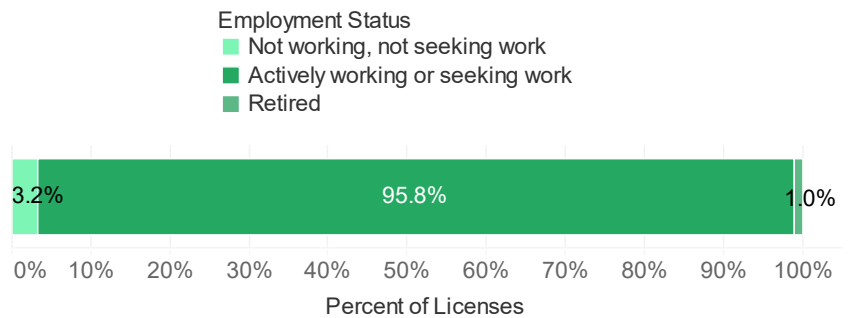


Just over 90 percent of Oral Health professionals completed their residency in the U.S., but less than 70 percent completed their residency within California.

Active License in CA	U.S. - CA	U.S. - Other	Outside U.S.
Dentist	69.0%	21.5%	9.5%
All	69.0%	21.5%	9.5%

Figure F-4: Employment Status: Oral Health

Among Oral Health professionals, 95.8 percent are actively working or seeking work. Outliers include Dentists with 1.7 percent already retired. Additionally, RDH in Extended Functions responses showed 25 percent were not working and not seeking work; however, this high percentage was caused by the low number of licenses within this profession in the state. These metrics will be used in the future to calculate more accurate supply data for each profession.

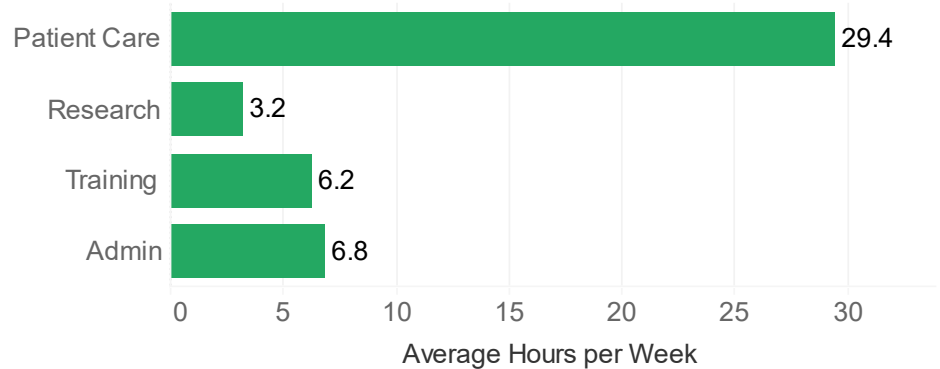


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Active License in CA	Actively Working or Seeking Work	Not Working, Not Seeking Work	Retired
Dentist	97.3%	1.1%	1.7%
Orthodontic Assistant	96.7%	3.2%	0.1%
RDA in Extended Functions	96.6%	2.6%	0.8%
RDH Alternative Practice	94.9%	4.3%	0.8%
RDH in Extended Functions	75.0%	25.0%	0.0%
Registered Dental Assistant	94.5%	5.2%	0.3%
Registered Dental Hygienist	94.7%	4.4%	0.9%
All	95.8%	3.2%	1.0%

Figure F-5: Full-Time Equivalent Metrics: Oral Health

On average, Oral Health professionals spend the highest number of hours per week on Patient Care (29.4 hours), and the least amount of time per week on Research (3.2 hours). Outliers include RDH in Extended Functions with only 11.5 hours per week spent on Patient Care, and Registered Denal Assistants with 9.4 hours spent on Administrative activities. These metrics will be used in the future to calculate more accurate patient-to-provider ratios for each profession, which will lead to more accurate supply and demand modeling.

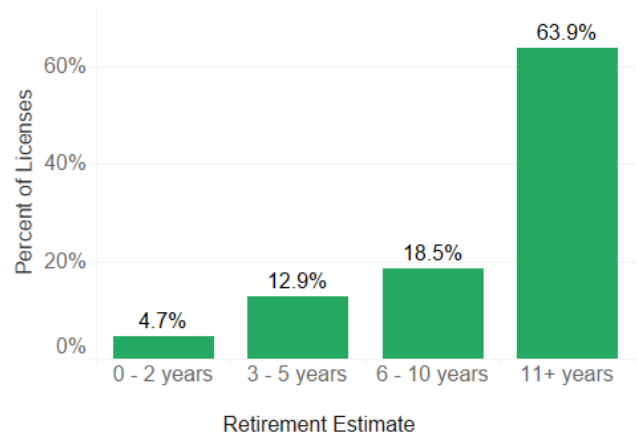


Active License in CA	Patient Care	Research	Training	Admin
Dentist	30.7	1.9	5.0	6.8
Orthodontic Assistant	30.1	5.7	9.1	7.8
RDA in Extended Functions	31.7	5.1	8.5	7.8
RDH Alternative Practice	26.0	3.7	7.1	6.8
RDH in Extended Functions	11.5	1.2	0.9	0.9
Registered Dental Assistant	29.2	5.4	8.8	9.4
Registered Dental Hygienist	27.1	2.3	4.2	2.8
All	29.4	3.2	6.2	6.8

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Figure F-6: Retirement Estimates: Oral Health

Over 17 percent of Oral Health professionals estimate retiring in the next five years, with only 63.9 percent estimating retiring in 11 or more years. Dentists and RDHs in Alternative Practice are largely driving this trend, with over 40 percent estimating retirement by 2033. These metrics will be crucial for calculating more accurate supply and demand models for each profession. In addition, this information may be useful in helping to identify which areas are in most need of funding to maintain the supply of Oral Health professionals across the state.

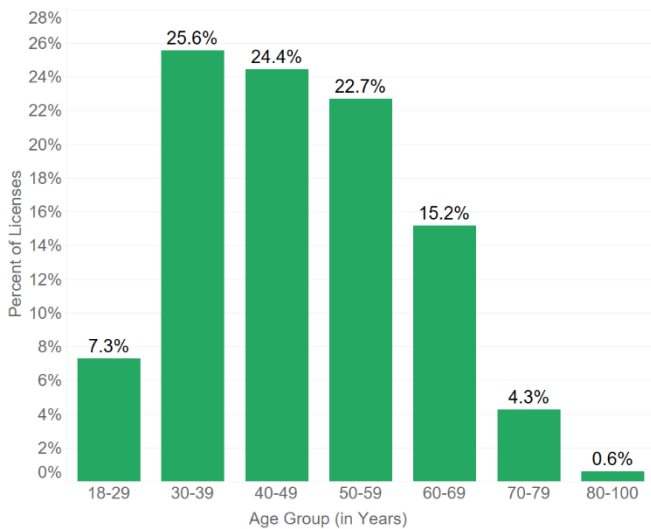


It should be noted that the small sample of RDHs in Extended Function is causing an inflated estimate for retirement within that license type.

Active License in CA	0-2 Years	3-5 Years	6-10 Years	11+ Years
Dentist	6.4%	16.3%	21.6%	55.8%
Orthodontic Assistant	1.7%	4.8%	13.6%	79.9%
RDA in Extended Functions	4.1%	10.1%	19.6%	66.2%
RDH Alternative Practice	2.7%	14.5%	23.0%	59.8%
RDH in Extended Functions	0.0%	100.0%	0.0%	0.0%
Registered Dental Assistant	2.6%	9.1%	15.0%	73.2%
Registered Dental Hygienist	4.8%	13.0%	17.9%	64.2%
All	4.7%	12.9%	18.5%	63.9%

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Figure F-7: Age Distribution: Oral Health



Overall, 20.1 percent of licensees in the Oral Health category are 60 years old and over.

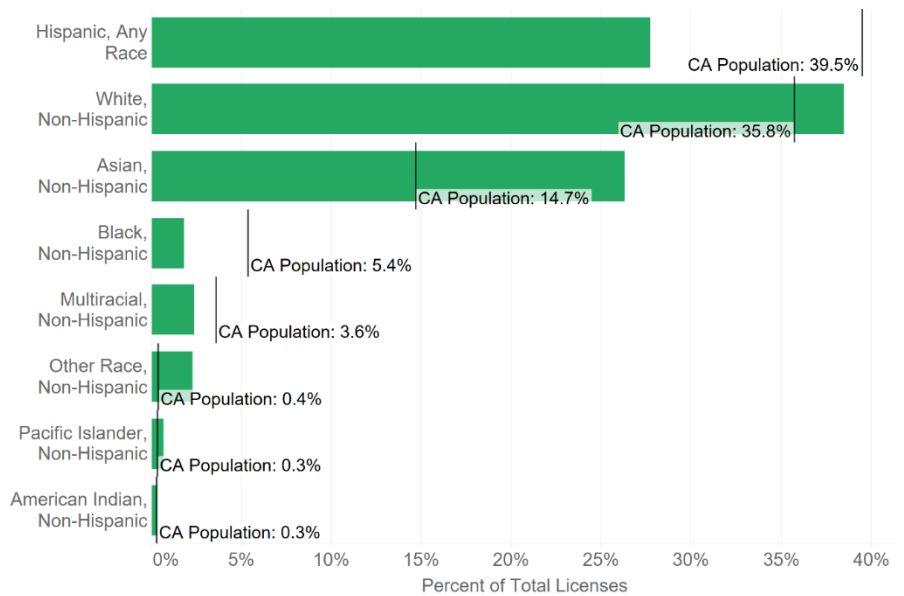
Around 50 percent of RDHs in Extended Functions, 30 percent of Dentists, 22 percent of RDHs Alternative Practice, 17 percent of Registered Dental Hygienists, 11 percent of Registered Dental Assistants, 13 percent of RDAs in Extended Functions, and 7 percent of Orthodontic Assistants are 60 years and over.

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Active License in CA	18-29	30-39	40-49	50-59	60-69	70-79	80-100
Dentist	2.0%	20.0%	22.7%	25.1%	20.6%	8.2%	1.4%
Orthodontic Assistant	13.1%	33.5%	28.2%	18.6%	6.3%	0.3%	N/A
RDA in Extended Functions	3.9%	24.8%	29.1%	29.3%	11.9%	1.0%	N/A
RDH Alternative Practice	0.8%	19.5%	30.5%	27.1%	18.4%	3.7%	N/A
RDH in Extended Functions	N/A	N/A	N/A	50.0%	33.3%	16.7%	N/A
Registered Dental Assistant	14.4%	29.0%	24.7%	21.1%	10.0%	0.7%	<0.1%
Registered Dental Hygienist	6.6%	30.6%	26.2%	20.0%	13.5%	2.9%	0.2%
All	7.3%	25.6%	24.4%	22.7%	15.2%	4.3%	0.6%

Figure F-8: Race/Ethnicity: Oral Health

Hispanic/Latine/x populations are underrepresented overall and in four out of the seven Oral Health professions. White populations are represented higher overall, relative to their percentages of the population, but are underrepresented in four out of the seven Oral Health license types. Asian populations are represented higher among Dentists, RDH Alternative Practice, RDH in Extended Functions, and Registered Dental Hygienist license types, relative to their percentages of the population. Black populations are underrepresented among all license types.



Oral Health professions have the lowest representation of Black populations, around 2 percent, out of all the profession types highlighted in this report.

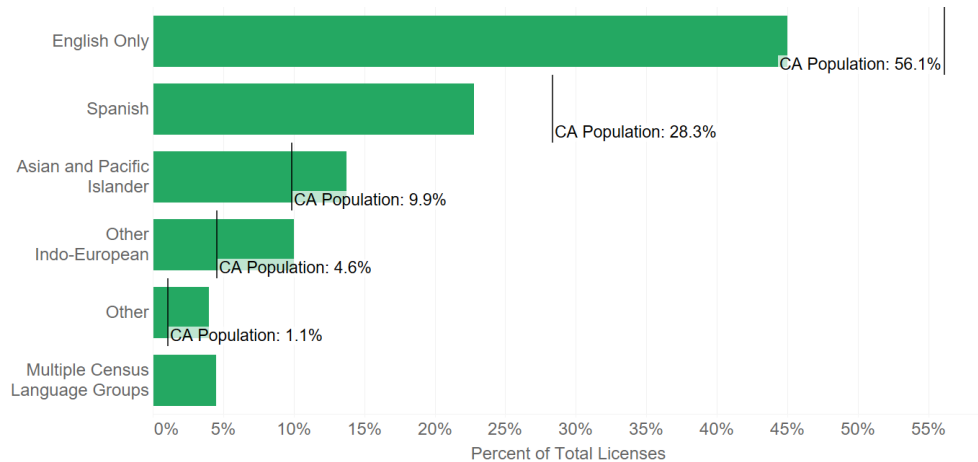
Active License in CA	American Indian, NH	Asian, NH	Black, NH	Hispanic/Latine/x	Multiracial, NH	Pacific Islander, NH	White, NH	Other Race, NH
Dentist	0.2%	42.3%	1.6%	9.1%	2.1%	0.6%	40.8%	3.3%
Orthodontic Assistant	0.3%	12.2%	2.6%	55.2%	2.2%	1.6%	24.9%	1.1%
RDA in Extended Functions	0.9%	12.3%	1.4%	46.9%	2.0%	1.0%	33.6%	1.9%
RDH Alternative Practice	N/A	20.1%	2.8%	24.2%	2.5%	0.6%	46.5%	3.3%
RDH in Extended Functions	N/A	50.0%	N/A	37.5%	N/A	N/A	12.5%	N/A
Registered Dental Assistant	0.5%	14.0%	2.3%	50.6%	2.2%	0.8%	28.2%	1.4%
Registered Dental Hygienist	0.2%	18.6%	1.2%	21.6%	3.3%	0.6%	52.6%	2.0%
All	0.3%	26.3%	1.8%	27.7%	2.4%	0.7%	38.5%	2.3%

Note: Due to the way individual races/ethnicities were combined, there are levels of nuance within each group that are not captured by these figures.

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Figure F-9: Languages Spoken: Oral Health

Spanish-speaking populations are underrepresented overall and in four out of the seven Oral Health license types. Populations who are fluent in Asian and Pacific Islander languages are represented higher among Dentists, RDHs Alternative Practice, and RDHs in Extended Functions, relative to their percentages of the population. Dentists have the highest proportion of licensees within Oral Health who provide services in multiple census language groups.

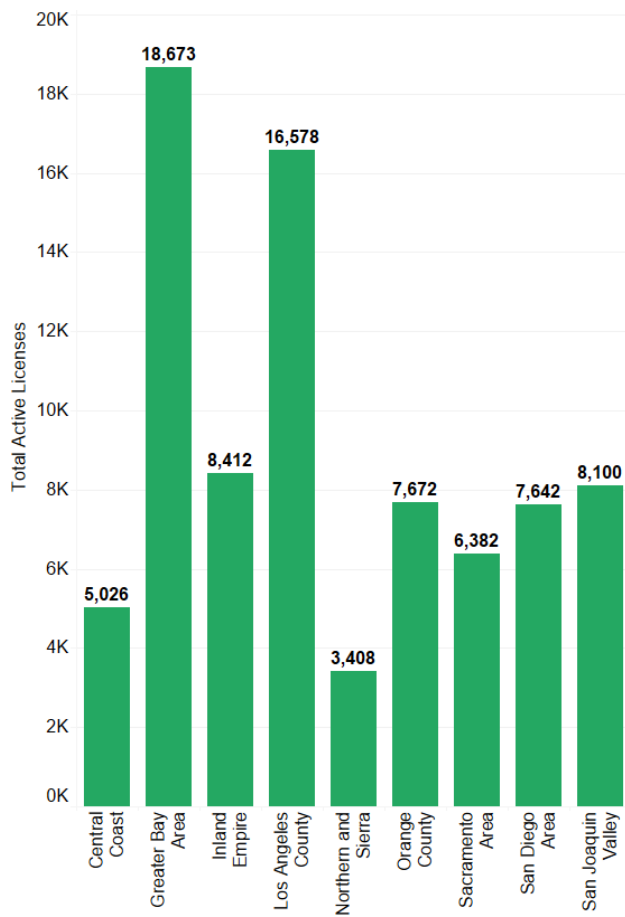


Active License in CA	Asian and Pacific Islander	English Only	Other Indo-European	Spanish	Multiple Census Language Groups	Other
Dentist	19.0%	36.1%	16.1%	15.2%	7.9%	5.8%
Orthodontic Assistant	9.1%	42.4%	2.7%	41.8%	0.9%	3.2%
RDA in Extended Functions	8.7%	45.0%	5.8%	34.3%	2.7%	3.6%
RDH Alternative Practice	11.2%	48.0%	13.8%	19.3%	4.2%	3.6%
RDH in Extended Functions	12.5%	75.0%	N/A	12.5%	N/A	N/A
Registered Dental Assistant	9.9%	46.1%	3.7%	36.3%	1.6%	2.3%
Registered Dental Hygienist	9.2%	63.2%	7.7%	14.9%	2.1%	2.9%
All	13.7%	45.0%	10.0%	22.8%	4.5%	4.0%

Note: Due to the way individual languages were combined, there are levels of nuance within each group that are not captured by these figures.

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Figure F-10: Active Licenses: Oral Health



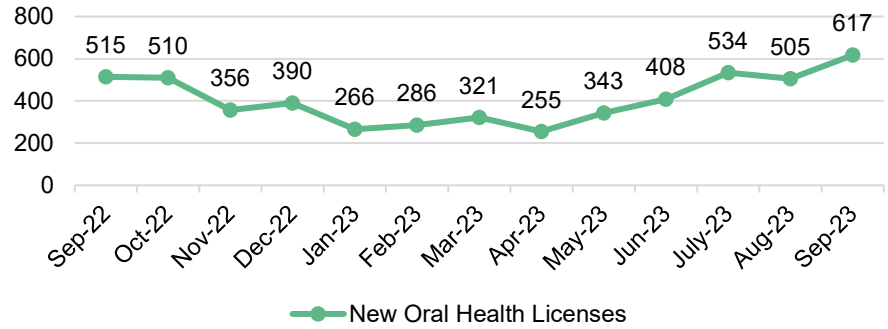
Dentists are the largest Oral Health group, representing nearly 40 percent of active Oral Health licenses. The Greater Bay Area Region has the largest amount of Oral Health licenses while the Northern and Sierra Region has the lowest number of Oral Health licenses overall.

Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Dentist	1,623	8,050	2,611	8,514	714	4,179	1,954	2,913	2,062
Orthodontic Assistant	106	220	236	398	49	73	165	117	224
RDA in Extended Functions	163	342	193	243	189	94	281	156	268
RDH Alternative Practice	42	146	71	188	51	60	51	65	62
RDH in Extended Functions		8		2	1	1	1	2	1
Registered Dental Assistant	1,760	6,292	3,468	4,408	1,540	1,629	2,422	2,667	3,822
Registered Dental Hygienist	1,332	3,615	1833	2,825	864	1,636	1,508	1,722	1,661

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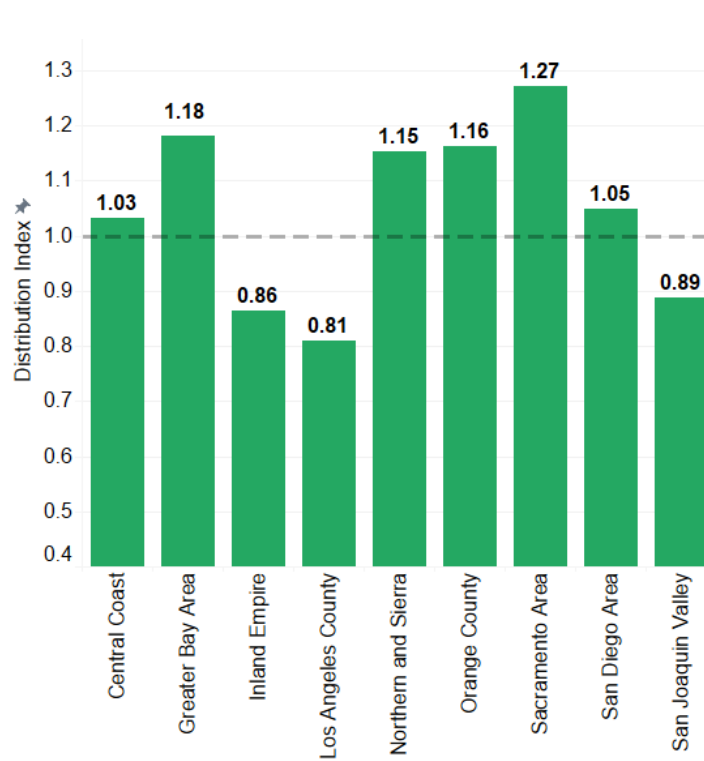
Figure F-11: New Licenses: Oral Health

New licenses were added in a consistent manner throughout the year with slight peaks during the summer months coinciding with the conclusion of the academic school year. On average, there were 408 new Oral Health licenses added per month from September 2022-September 2023.



Future work will aim to identify trends within each profession, as well as modeling future completions.

Figure F-12: Distribution Index: Oral Health



The distribution index describes the magnitude of difference between a region’s share of the state’s providers and its share of the state’s population. A distribution index of 1 indicates the region has an equal share of the state’s providers and population (e.g., 10 percent of the state’s providers and 10 percent of the state’s population). A distribution index below 1 indicates a smaller share of providers than population (e.g., 5 percent of the state’s providers and 10 percent of the state’s population), and a distribution index greater than 1 indicates the opposite. The further away the index is from 1, the greater the maldistribution.

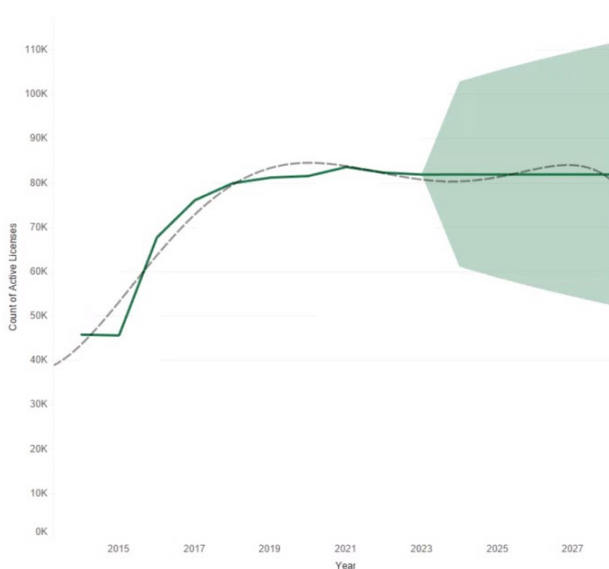
Overall, Oral Health licenses are well distributed throughout the state, although the Northern and Sierra and Sacramento Area Regions have multiple provider ratios higher than that of the population. Additionally, indexes for RDH in Extended Functions were inflated by the low number of licenses in the state.

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Active License in CA	Central Coast	Greater Bay Area	Inland Empire	Los Angeles County	Northern and Sierra	Orange County	Sacramento Area	San Diego Area	San Joaquin Valley
Dentist	0.84	1.28	0.67	1.04	0.61	1.59	0.98	1.00	0.57
Orthodontic Assistant	1.12	0.72	1.25	1.00	0.85	0.57	1.69	0.83	1.27
RDA in Extended Functions	1.42	0.92	0.84	0.50	2.71	0.61	2.37	0.91	1.25
RDH Alternative Practice	0.96	1.03	0.81	1.02	1.92	1.01	1.13	0.99	0.76
RDH in Extended Functions	N/A	2.13	N/A	0.41	1.42	0.64	0.84	1.15	0.46
Registered Dental Assistant	1.06	1.16	1.04	0.63	1.52	0.72	1.41	1.07	1.23
Registered Dental Hygienist	1.32	1.10	0.91	0.66	1.41	1.20	1.45	1.14	0.88
All	1.03	1.18	0.86	0.81	1.15	1.16	1.27	1.05	0.89

Note: Distribution index values less than or equal to 0.5 (indicating a low license to population ratio) are marked in light green. Indexes greater than or equal to 1.5 (indicating a high license to population ratio) are marked in dark green.

Figure F-13: Supply: Oral Health



To project supply for the Oral Health workforce, a multi-polynomial model with a 95 percent confidence interval was used (Figure F-13). Actual license counts from 2014-2023 were used to predict the years' supply of licenses for 2024-2028.

All professions within Oral Health are expected to have an increase in active licenses in the workforce except Registered Dental Hygienists and RDA in Extended Functions. These predictions were made using a multi-polynomial model with a 95 percent confidence interval.

Row Labels	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Dentist			31,019	31,311	31,652	31,958	31,931	32,694	32,765	32,620	33,013	33,236	33,459	33,682	33,906
Orthodontic Assistant			473	667	897	1,105	1,202	1,335	1,442	1,588	1,720	1,853	1,985	2,118	2,250
RDA in Extended Functions	1,533	1,554	1,313	1,365	1,446	1,516	1,537	1,517	1,821	1,929	1,797	1,797	1,797	1,797	1,797
RDH Alternative Practice			195	198	200	187	518	609	702	736	818	896	973	1,050	1,127
RDH in Extended Functions			8	8	8	7	17	21	20	16	24	27	31	35	39
Registered Dental Assistant	44,267	44,079	28,652	29,120	29,518	29,857	29,925	30,741	28,567	28,008	28,757	28,757	28,757	28,757	28,757
Registered Dental Hygienist			6,065	13,442	16,230	16,586	16,442	16,689	17,008	16,996	16,815	16,815	16,815	16,815	16,815
Total	45,800	45,633	67,725	76,111	79,951	81,216	81,572	83,606	82,325	81,893	82,944	83,381	83,817	84,254	84,691

Note: Cells shaded in light green are predictions based on the Workforce Supply Model (see Figure F-13).

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TECHNICAL APPENDIX

Active Licenses: Counts for Active licenses include those in “CLEAR”, “Curr LimtdPract”, “CurrTmp FamSupp”, “Current”, “CurrentProbatr”, “Military-Active”, “Military–Active”, “PROBATION OR PRACTICE RESTRICTION”, “VALID - PAID RENEWAL”, or “VALID - PAID RENEWAL FEE” status on September 1, 2023. Licenses in all other statuses are considered Inactive and excluded.

Age: DCA provides HCAI with the date of birth of licensees. For this report, age is calculated as the difference between September 1st, 2023 and the licensee's date of birth. Licensees with a missing date of birth, or a resulting age under 18 or over 100 were excluded.

California vs. Out of State: HCAI geocodes all licensee’s public address of record. Any license with a resulting state field equal to California is considered “In State”, all other values are considered “Out of State”.

California Population: This report uses population estimates and projections from the Department of Finance, specifically the county population projections ([P-2A](#)) for 2023.

Region	Population (2023)	Percent of Total
Central Coast	2,317,540	5.9%
Greater Bay Area	7,532,120	19.3%
Inland Empire	4,636,918	11.9%
Los Angeles County	9,750,065	25.0%
Northern and Sierra	1,408,519	3.6%
Orange County	3,140,475	8.1%
Sacramento Area	2,392,204	6.1%
San Diego Area	3,472,953	8.9%
San Joaquin Valley	4,339,693	11.1%
Total	38,990,487	100%

Completions: IPEDS collects data on the number of students who complete a postsecondary education program by institutions, type of program, and level of award (certificate or degree).

Languages Spoken Categories: HCAI collects detailed language(s) spoken to provide services to clients through the workforce survey. Data are summarized using high-level groups based on the U.S. Census Bureau’s Four Group Classification to allow for comparison with the population. The categories, “English Only” and “Multiple Census Language Groups” were added to accurately capture workforce responses.

Language Group	Detailed Languages
Asian and Pacific Islander	Chinese, Hmong, Ilocano, Samoan, Hawaiian, or other Austronesian languages, Japanese, Khmer, Korean, Other languages of Asia, Tagalog, Thai, Lao, or other Tai-Kadai languages, Vietnamese
English Only	English
Spanish	Spanish

Other Indo-European	Armenian, Bengali, French, German, Greek, Gujarati, Hindi, Italian, Indo-European, Nepali, Marathi, or other Indic languages, Other Indo-European languages, Persian, Polish, Portuguese, Punjabi, Russian, Serbo-Croatian, Telugu, Ukrainian or other Slavic languages, Urdu, Yiddish, Pennsylvania Dutch, or other West Germanic languages
Other	Amharic, Somali, or other Afro-Asiatic languages, Arabic, Hebrew, Navajo, Other and unspecified languages, Swahili or other languages of Central, Eastern and Southern Africa, Yoruba, Twi, Igbo, or other languages of Western Africa, Other, American Sign Language, Other Sign Language, Sign Language
Multiple Census Language Groups	More than one of the language groups above

Languages Spoken Throughout the California Population: This Report uses population estimates from the U.S. Census Bureau’s [DP-02 ACS Selected Social Characteristics 2021 5-year estimates](#).

Census Language Group	Population 5 years old and over	Percent of Total
Asian and Pacific Islander	3,660,285	9.9%
English Only	20,829,805	56.1%
Spanish	10,514,266	28.3%
Other Indo-European	1,694,572	4.6%
Other	401,871	1.1%
Total	37,100,799	100%

Note: The U.S. Census Bureau does not provide information on individuals who speak multiple census language groups.

New licenses: The count of licenses in “active” status with issue dates in each calendar month.

Programs: IPEDS categorizes each field of study according to the [Classification of Instructional Programs \(CIP\)](#), a detailed coding system for postsecondary instructional programs. Instructional Programs were mapped to each profession using a custom mapping based on the licensure requirements of each profession.

Race/Ethnicity Categories: HCAI collects detailed race and ethnicity information through the workforce survey but summarizes the data using high-level groups that maximize compatibility with other demographic data. The following table summarizes the top-level combinations of race and ethnicity used in this Report. To improve readability, HCAI will occasionally truncate the "Non-Hispanic" portion of the categories (e.g., "Asian, Non-Hispanic" may be referred to as "Asian").

		Ethnicity	
		Hispanic	Non-Hispanic
Race	Multiple Races	Hispanic, Any Race	Multiracial, Non-Hispanic
	White	Hispanic, Any Race	White, Non-Hispanic
	Asian	Hispanic, Any Race	Asian, Non-Hispanic
	Black	Hispanic, Any Race	Black, Non-Hispanic
	American Indian	Hispanic, Any Race	American Indian, Non-Hispanic
	Pacific Islander	Hispanic, Any Race	Pacific Islander, Non-Hispanic
	Other	Hispanic, Any Race	Other Race, Non-Hispanic

Race/Ethnicity of the California Population: This Report uses population estimates from the U.S. Census Bureau's [DP-05 ACS Demographic and Housing Estimates 2021 ACS 5-year estimates](#).

Race/Ethnicity	Population	Percent of Total
American Indian, Non-Hispanic	124,341	0.3%
Asian, Non-Hispanic	5,802,086	14.7%
Black, Non-Hispanic	2,128,184	5.4%
Hispanic, Any Race	15,593,787	39.5%
Multiracial, Non-Hispanic	1,413,870	3.6%
Pacific Islander, Non-Hispanic	134,692	0.3%
White, Non-Hispanic	14,109,297	35.8%
Other Race, Non-Hispanic	149,096	0.4%
Total	39,455,353	100%

Region: HCAI geocodes all licensee's public address of record. Unknown or Out of State counties are excluded, and valid California counties are grouped into one of the following nine 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

Please note that the address of record is not necessarily the same as a practice location; however, analysis shows the address of record county matches the primary practice county approximately 82 percent of the time and the regions match approximately 90 percent of the time.

Survey Response Rates: The workforce survey is administered at the time of electronic licensure renewal. Licensees can decline to answer questions, and some questions are skipped for certain license types, so the response rates vary by license type and by question. The average response rates to each question across all license types are listed in the following table for all active in-state licenses:

Question	Response Rate
Race & Ethnicity Group	85.1%
Initial EDU Location	93.0%
Residency Location	85.3%
Employment Status	90.5%
Patient Activity	86.1%
Training Activity	81.9%
Research Activity	82.1%
Administrative Activity	82.6%
Other Activity	70.8%
Retirement Estimate	74.9%
Languages Spoken	90.2%

Survey Response Weighting: Response rates from the renewal survey vary by profession, so HCAI utilizes a cell-based weighting methodology to adjust for any difference between the respondents (sample) and the complete universe of active licenses (population). HCAI compares the distribution of each license type by region and decade of birth (e.g., 7 percent of all license type A are in Region X and born in the 1980s) to the distribution of the sample (e.g., 10 percent of license type A responses are in Region X and born in the 1980s). Dividing the population by the sample (e.g., 7/10) creates the group weight (0.7), which is used to adjust the weight of survey responses from licensees in that group. A weight below one indicates that the group is overrepresented in the sample compared to the population. Conversely, a weight above one indicates that the group is underrepresented in the sample. When counting the number of responses for each group, any Decline to State, or Not Asked responses are excluded. Because individuals can choose to decline different questions, each question has its own unique response weight for every group.