

Understanding Dental Workforce Issues in California

Beth Mertz, PhD, MA
Professor, UCSF School of Dentistry
Associate Director for Research, Healthforce Center at UCSF

September 18th, 2024

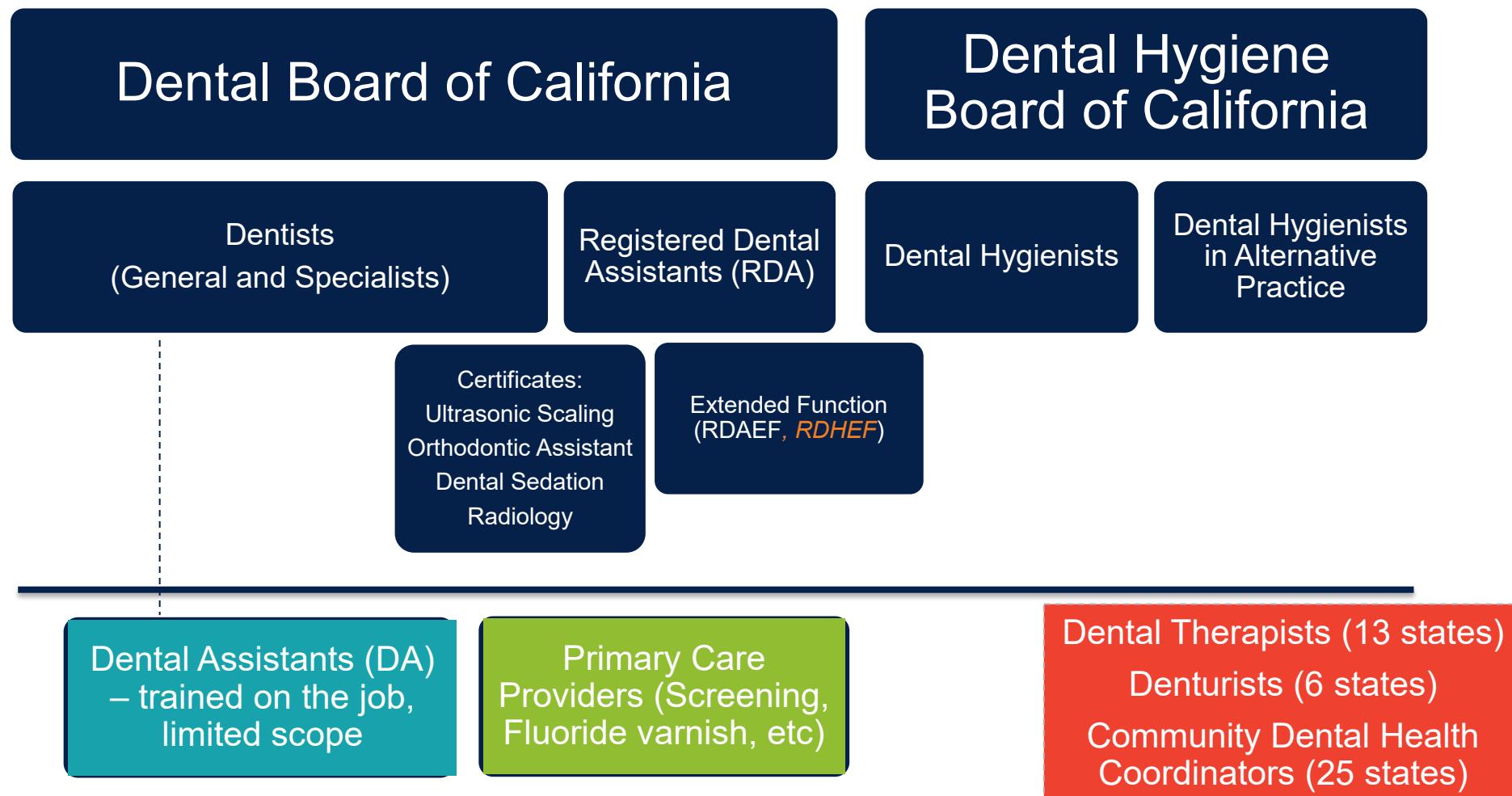
San Diego County Oral Health Coalition

Key Facts

- Oral care remains among the most unmet health needs in the US
- California has the greatest number of dentists per population of any state in the US. Yet, there are 78 population-specific shortage areas and 15 geographic dental health professional shortage areas currently listed in the state.
 - San Diego has 43 census tracts designated as Medi-Cal population D-HPSAs
- Only 15% of California dentists participate in Medi-Cal in a meaningful way for adult patients (>100 patients/year)
 - In San Diego, this number is 19%
- The cost of dental education has skyrocketed, at an average of \$300K per student, although has declined slightly post-pandemic
- Shortages of dental hygienists and dental assistants are pervasive post-COVID, but also vary by region and setting
 - San Diego has among the lowest ratio of allied providers per dentist

Structure, Distribution and Supply of the Oral Health Workforce

Oral Health Workforce: Regulatory Structure



DENTISTS DEMOGRAPHICS

California
2022



All Dentists
30,727

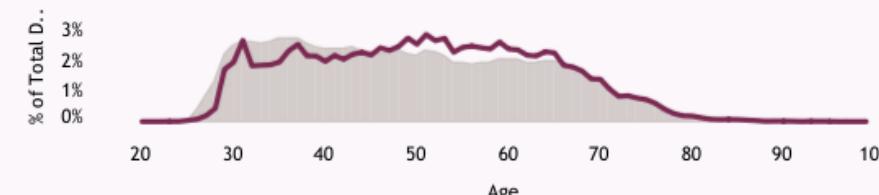


Per 100,000
78.7

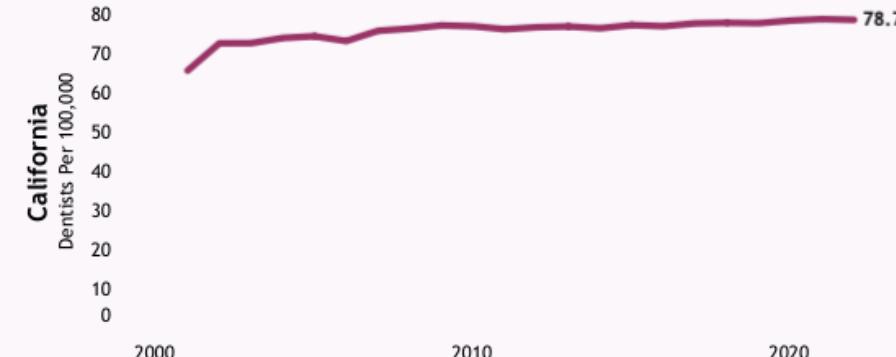


DISTRIBUTION OF DENTIST AGE

% of State Dentist Count
% of US Dentist Count
Year: 2022
 Show history

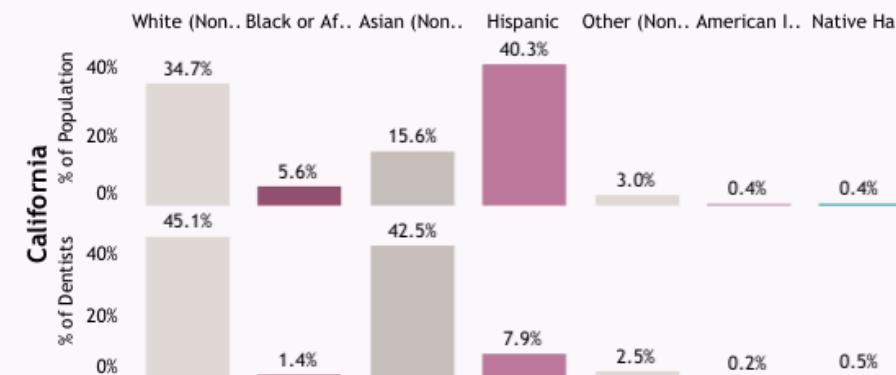


DENTISTS PER CAPITA

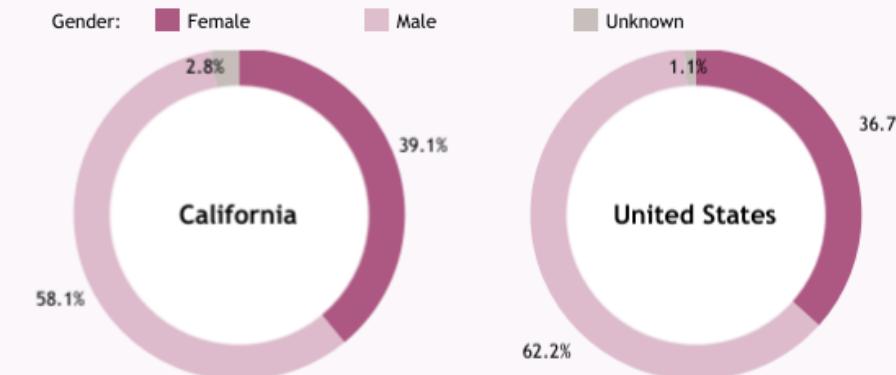


Geography
California
Year
2022

RACE AND ETHNICITY

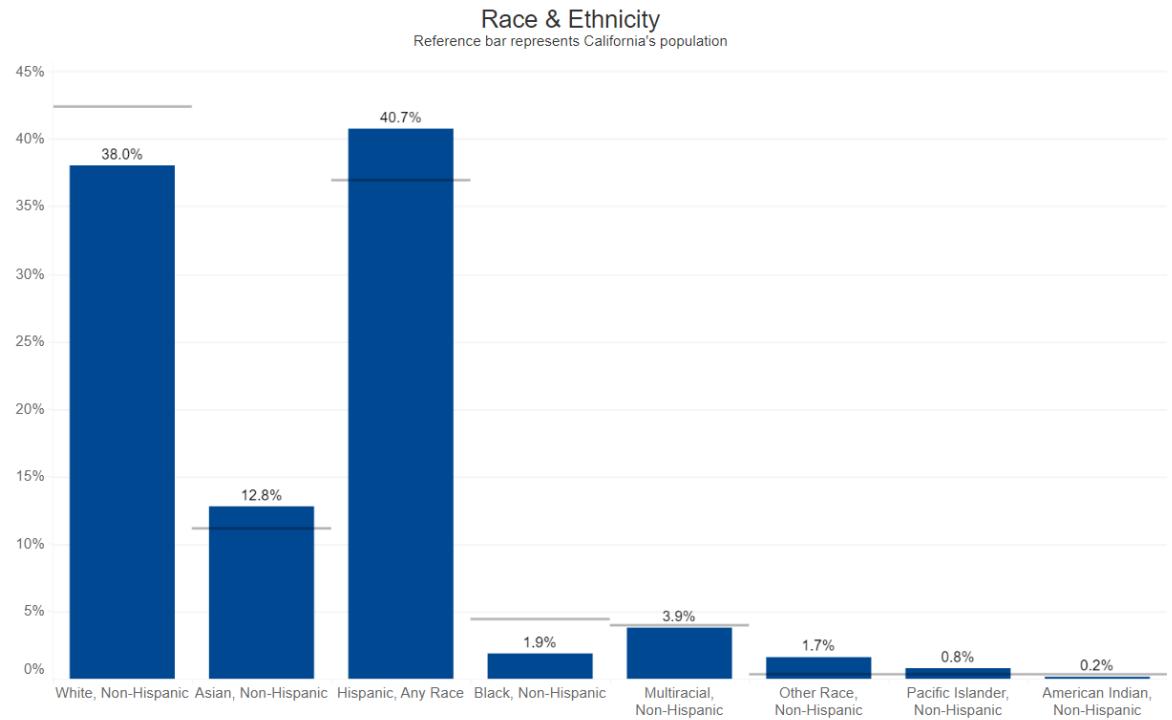
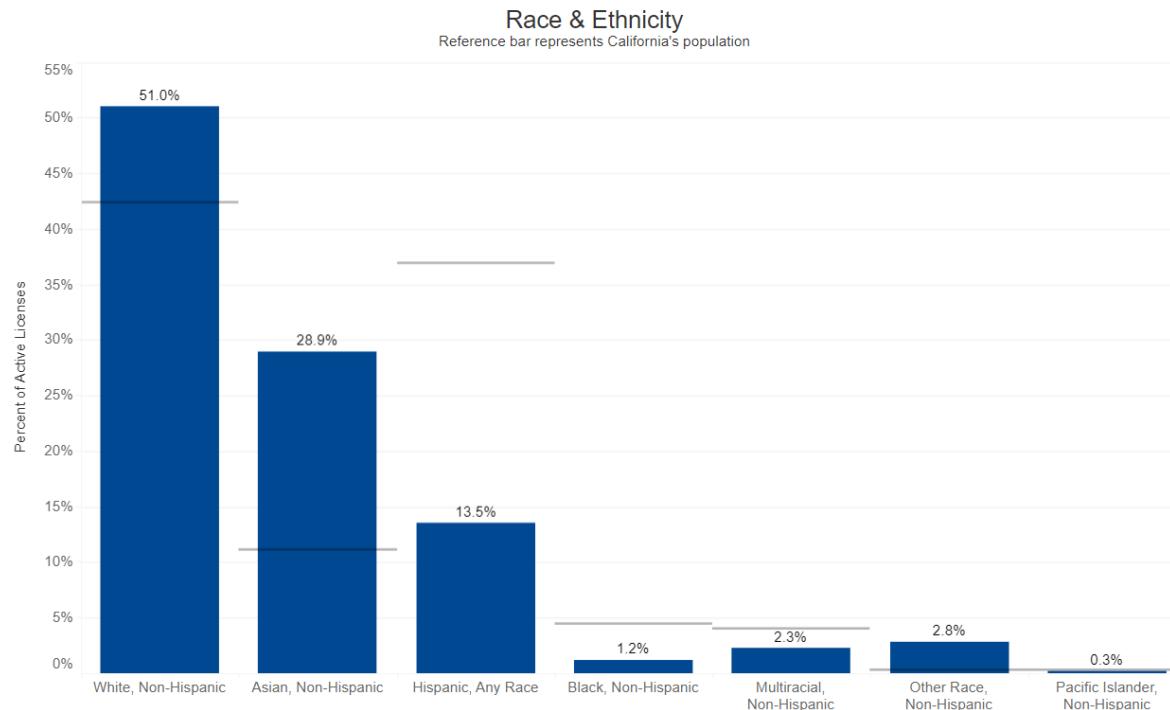


GENDER



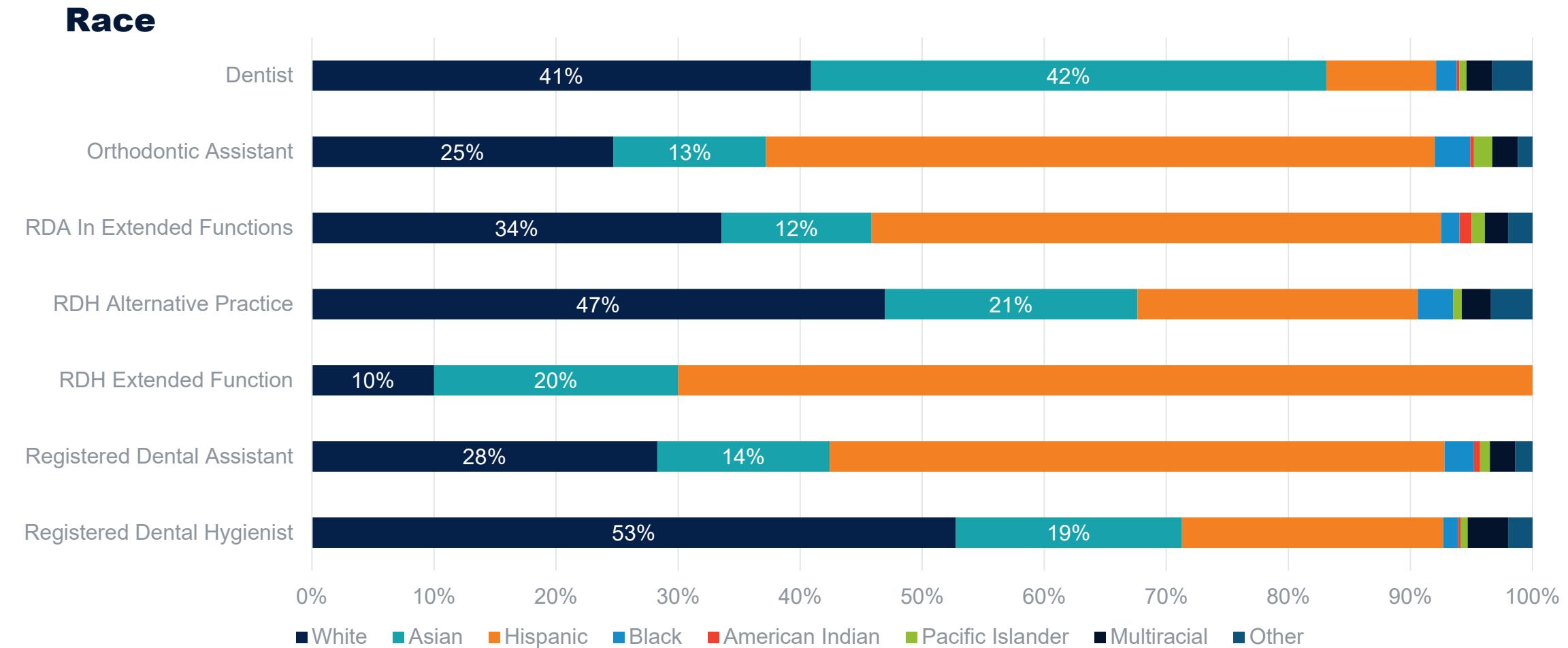
Race/Ethnic Breakdown of Dental Providers in San Diego Area

- Dentists
- Dental Assistants and Hygienists



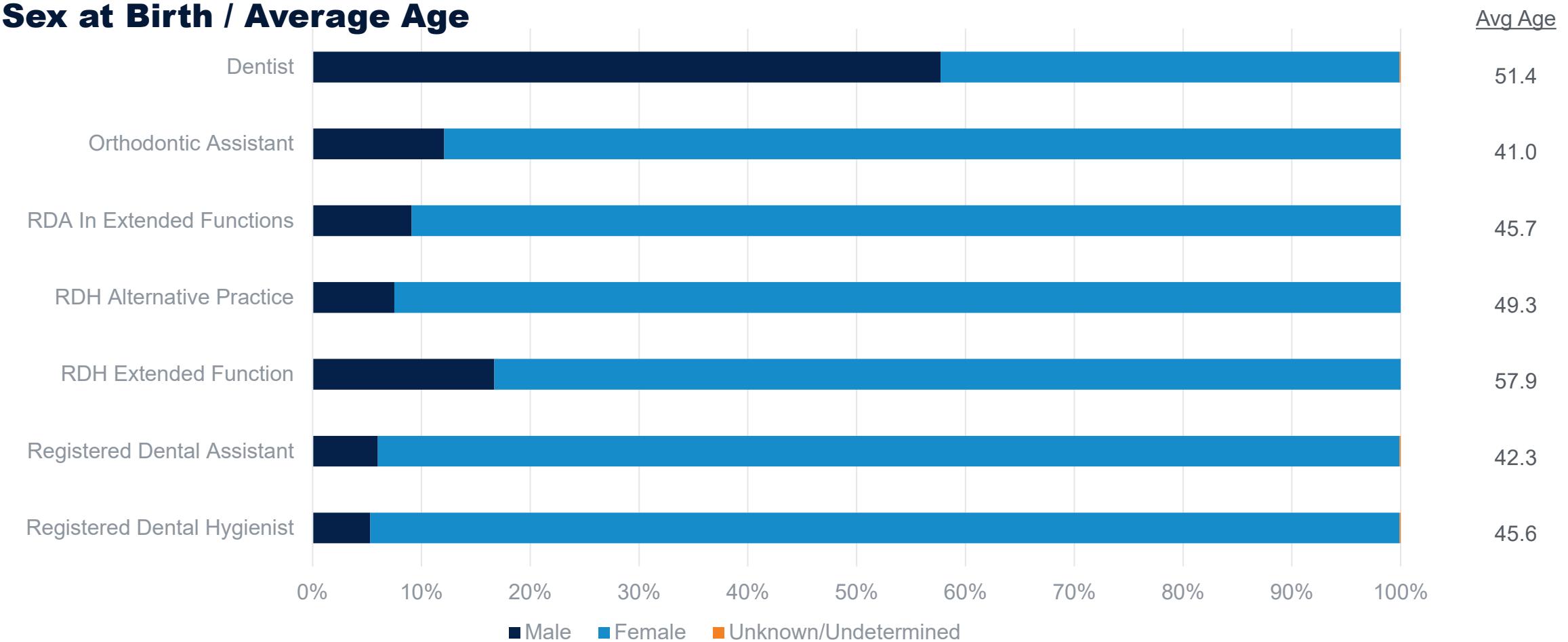
Source: HCAI Data Dashboard

Active License Holders in Dental Occupations (2023)

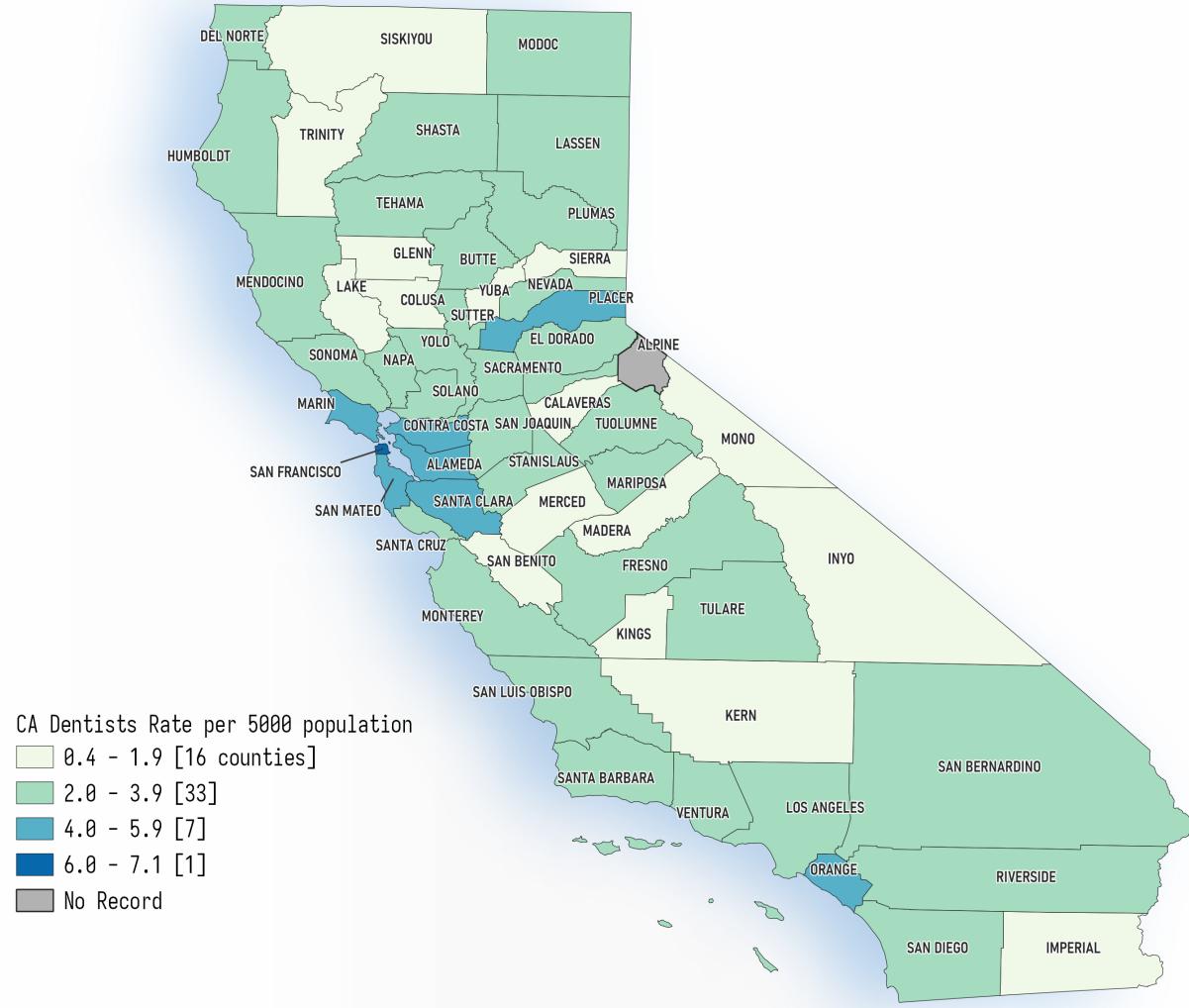


Active License Holders in Dental Occupations (2023)

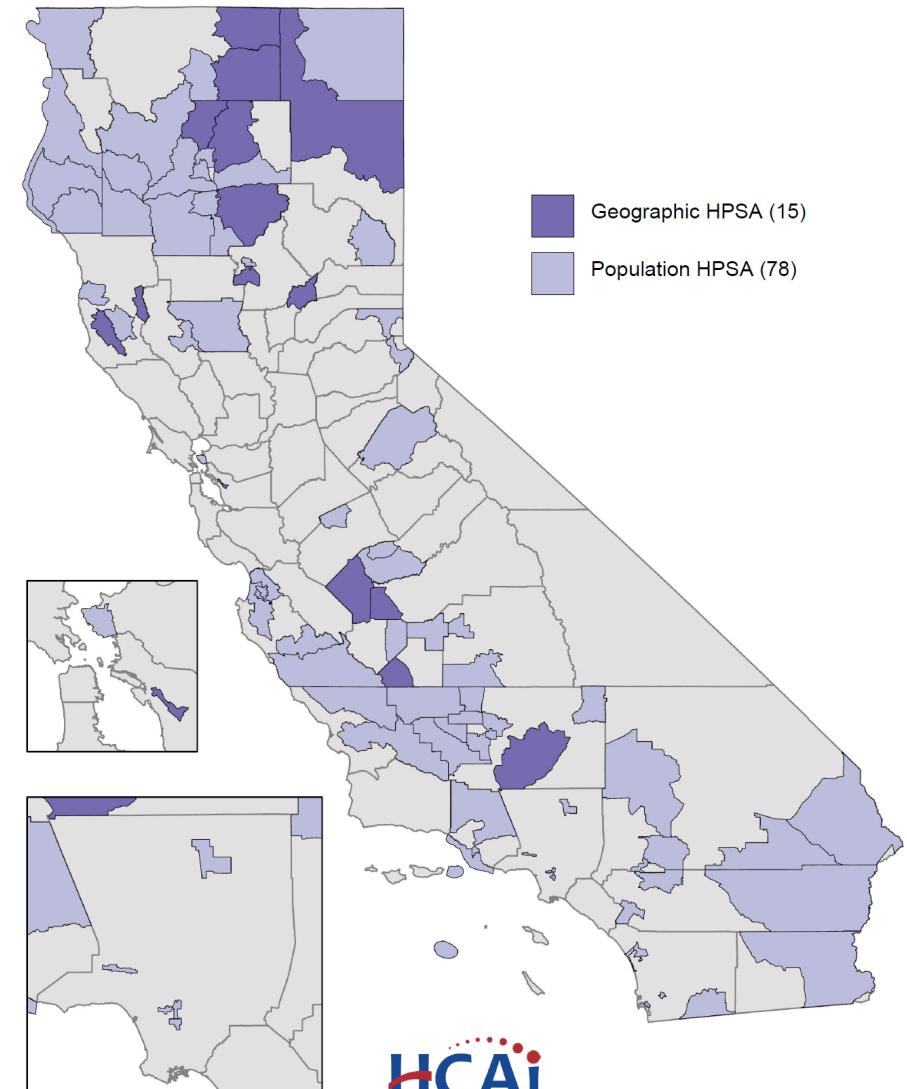
Sex at Birth / Average Age



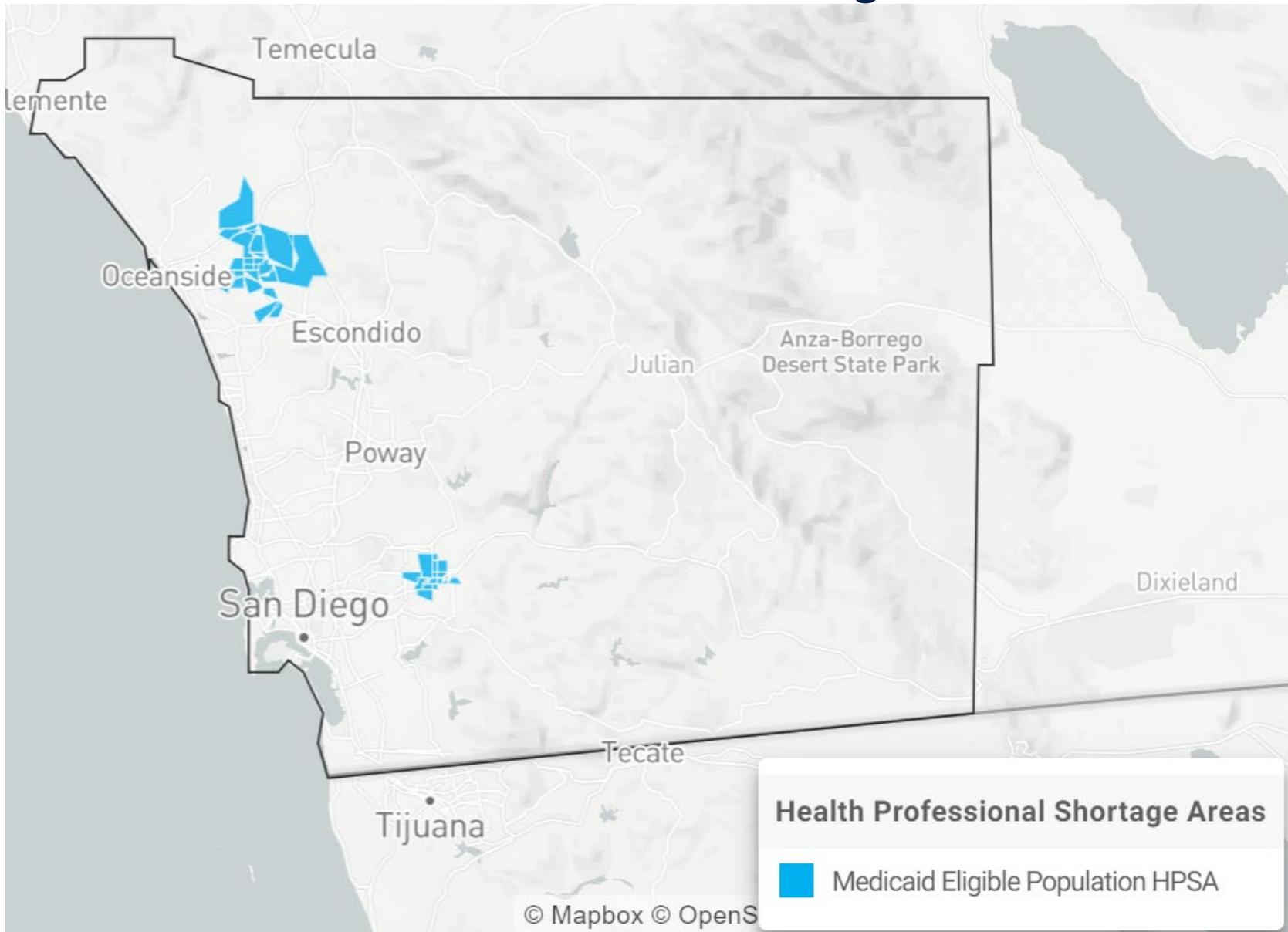
Dentist Supply (2021)



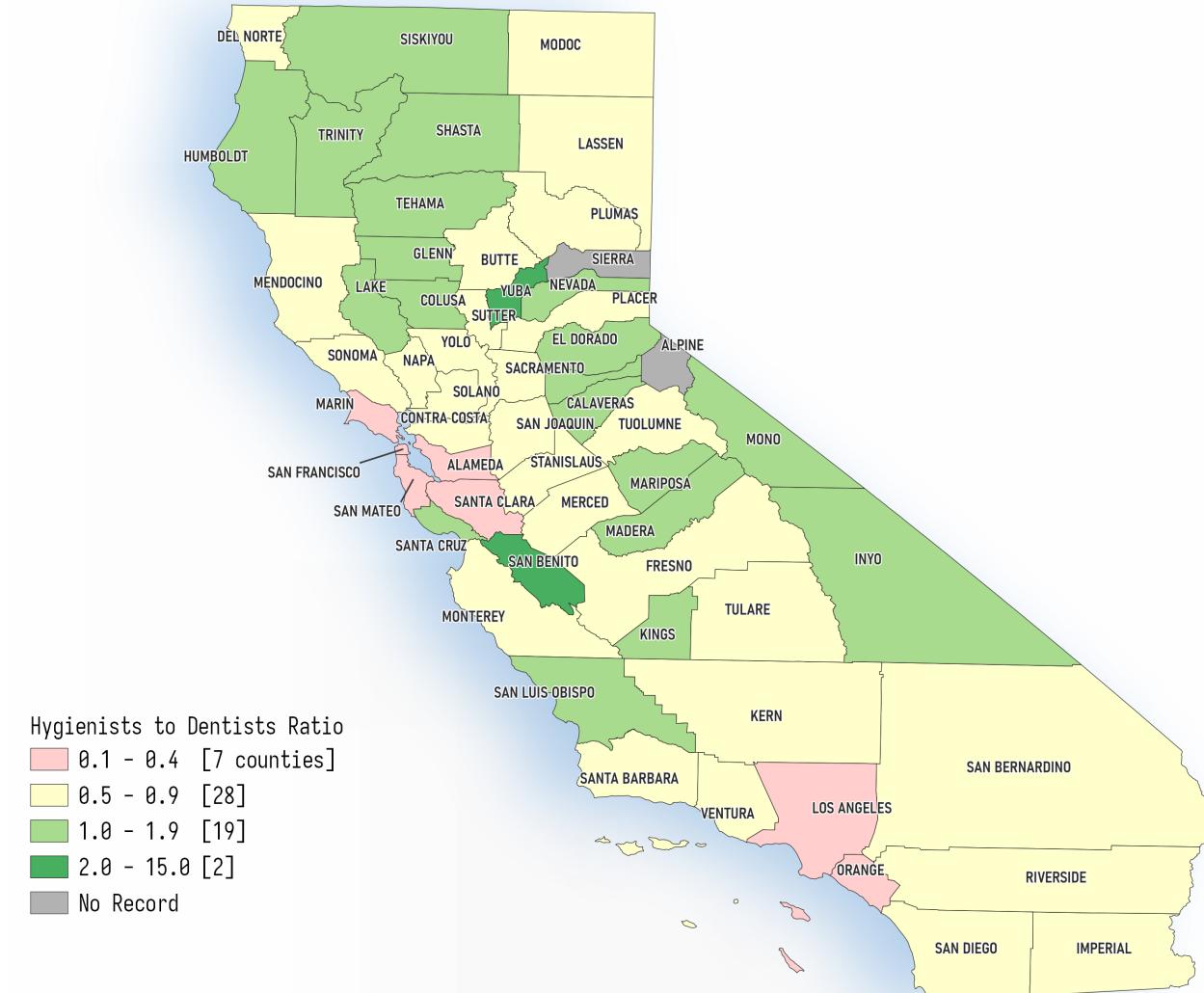
Health Professional Shortage Areas Dental Health



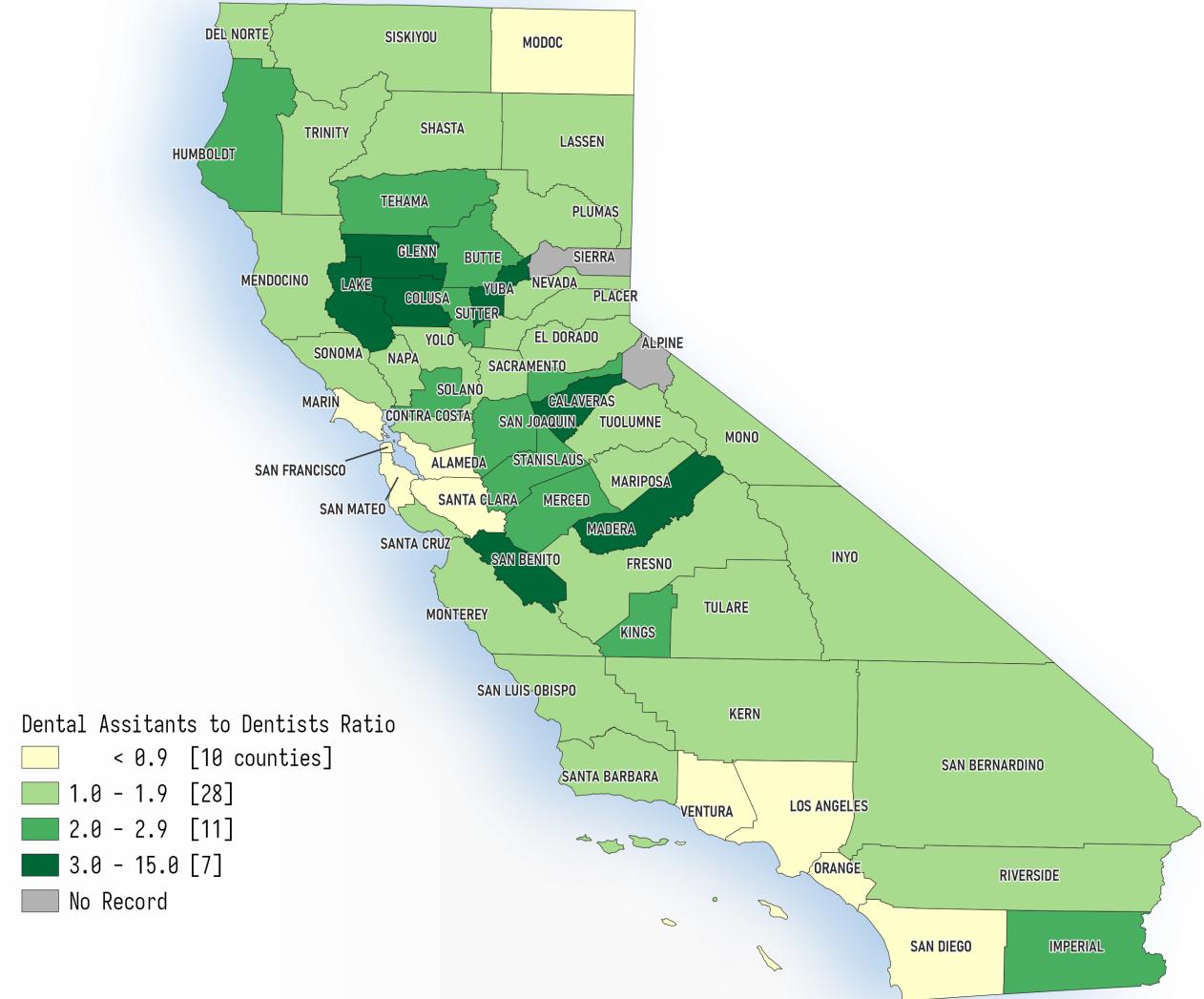
San Diego Dental Health Professional Shortage Areas



Dental Hygienists



Dental Assistants

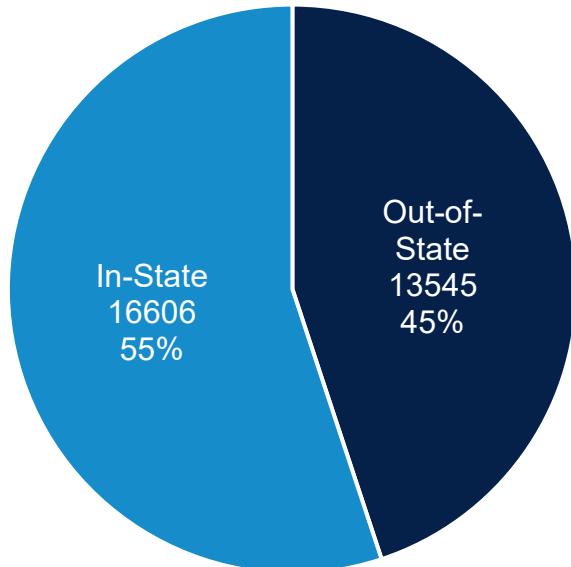


Active Dentists in CA (2021)

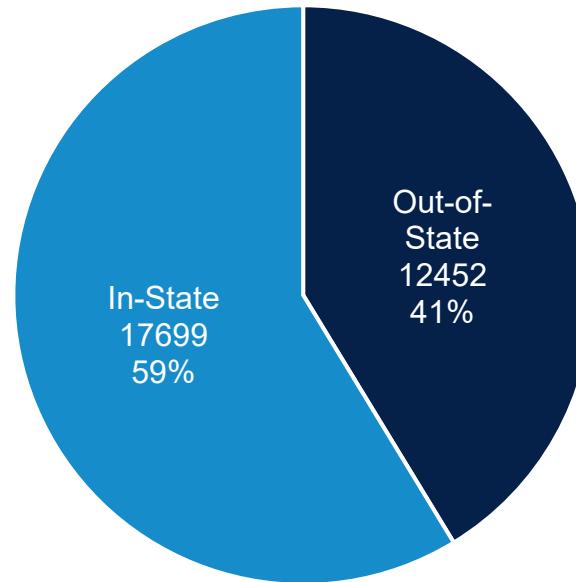
Majority are educated In-State vs. Out-of-State

Total: 30,151 Dentists actively practicing in CA

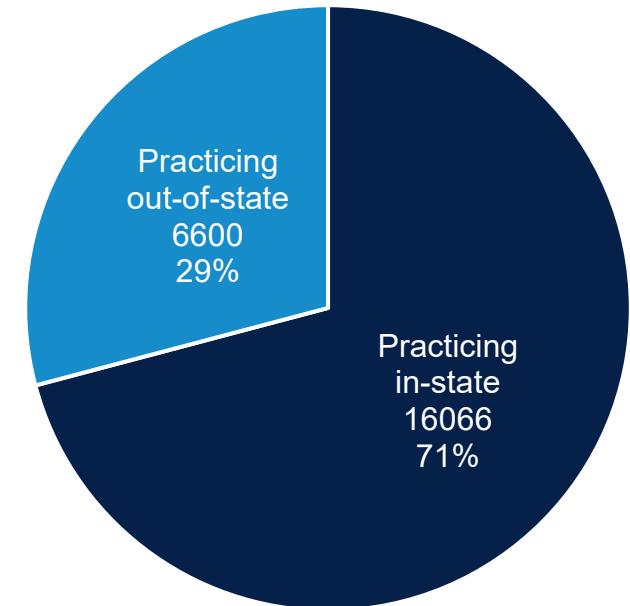
Dental Education (first degree)



First degree or advanced education



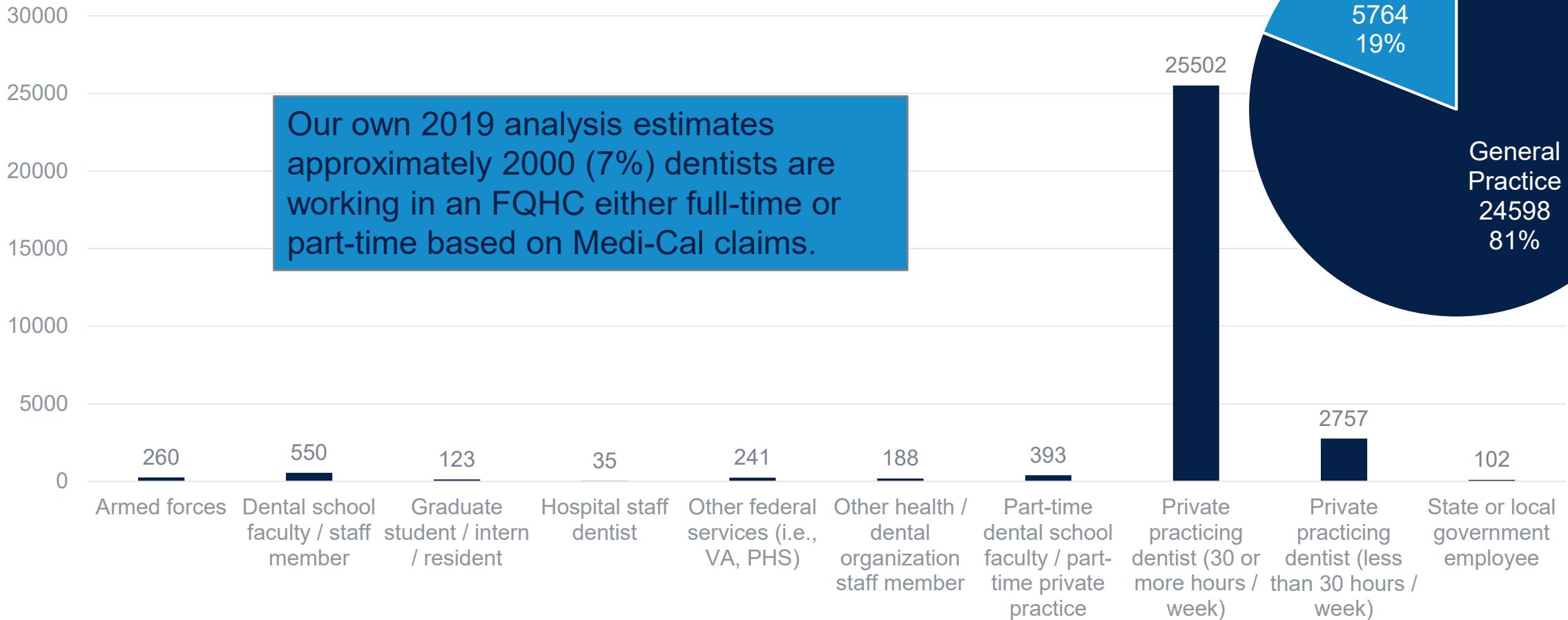
Practice location of all active dentists in the US who have graduated from a dental school in California



Active Dentists in CA (2021)

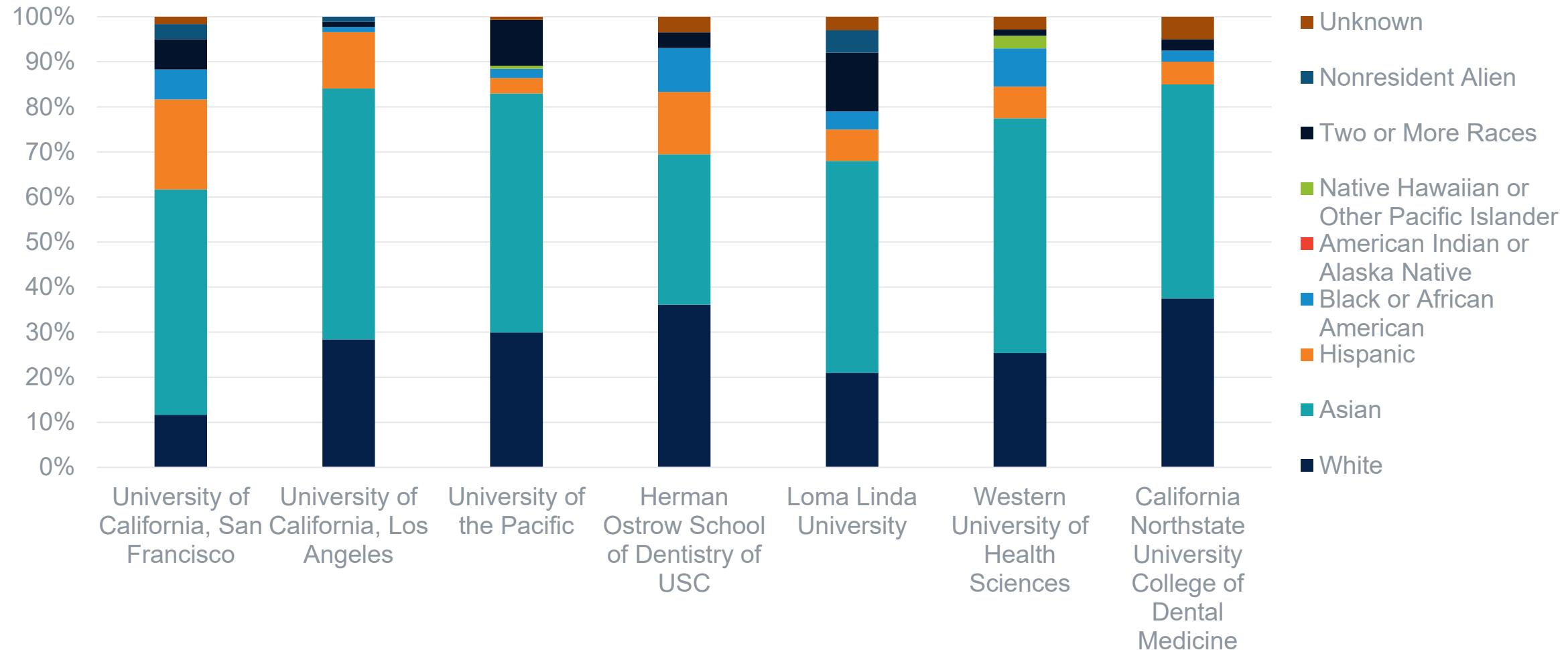
Occupational setting and specialty distribution mirror US trends

Total: 30,151 Dentists actively practicing in CA

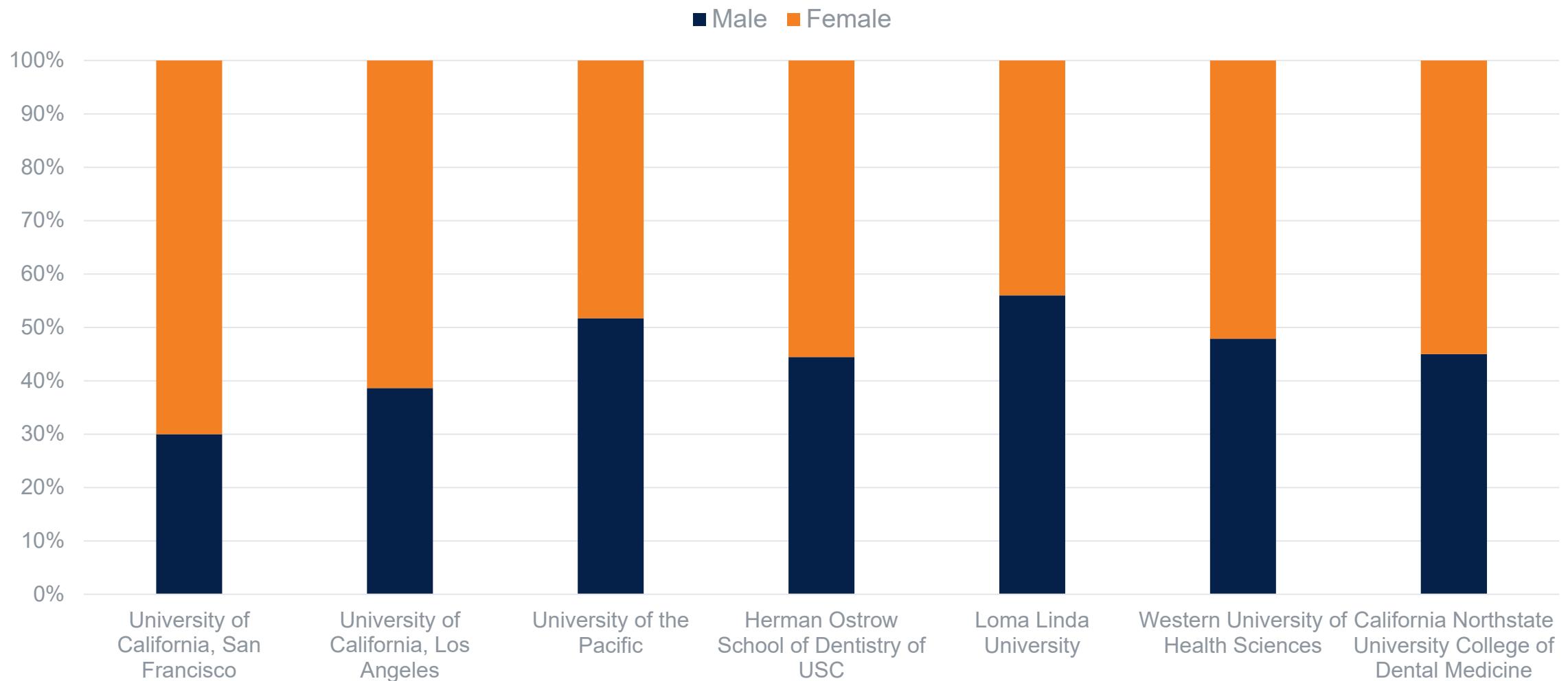


Oral Health Provider Education in California

First Year Enrollment in CA Dental Schools by Race/Ethnicity



First Year Enrollment in CA Dental Schools by Gender



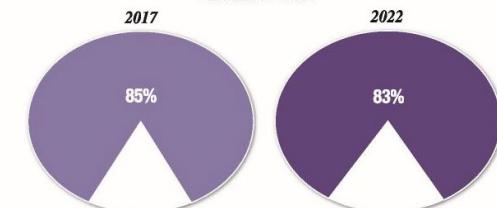
Average Education Debt and Average Dental School Debt, 2017 to 2022 for ADEA Senior Survey Respondents, in 2022 Dollars

2017	Average Education Debt	\$329,700
	Average Dental Education Debt	\$308,200
2018	Average Education Debt	\$327,300
	Average Dental Education Debt	\$309,600
2019	Average Education Debt	\$324,400
	Average Dental Education Debt	\$308,500
2020	Average Education Debt	\$335,300
	Average Dental Education Debt	\$318,500
2021	Average Education Debt	\$323,200
	Average Dental Education Debt	\$305,300
2022	Average Education Debt	\$293,900
	Average Dental Education Debt	\$286,200

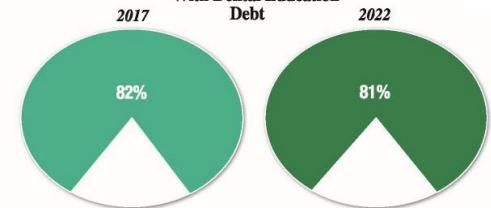
Notes: The number of respondents expecting to graduate with dental school debt was 2,376 in 2022 and 4,097 in 2017. The response rates for this survey question vary between 35% in 2020 and 75% in 2017. A response rate reflects the number of respondents for the debt question relative to the senior student population in that academic year. Education debt is a combination of the dental school debt the senior students graduate with from dental school (the loans contracted to finance partially or all of the cost of the predoctoral degree) and their pre dental education debt, which is the outstanding education debt the senior students had when they entered dental school. Debt values are adjusted to 2022 dollars with the U.S. Bureau of Labor Statistics Consumer Price Index for all urban consumers.

Sources: American Dental Education Association, Survey of Dental School Seniors, Classes of 2017 to 2022.

Percentage of Respondents Graduating With
Education Debt



Percentage of Respondents Graduating
With Dental Education
Debt

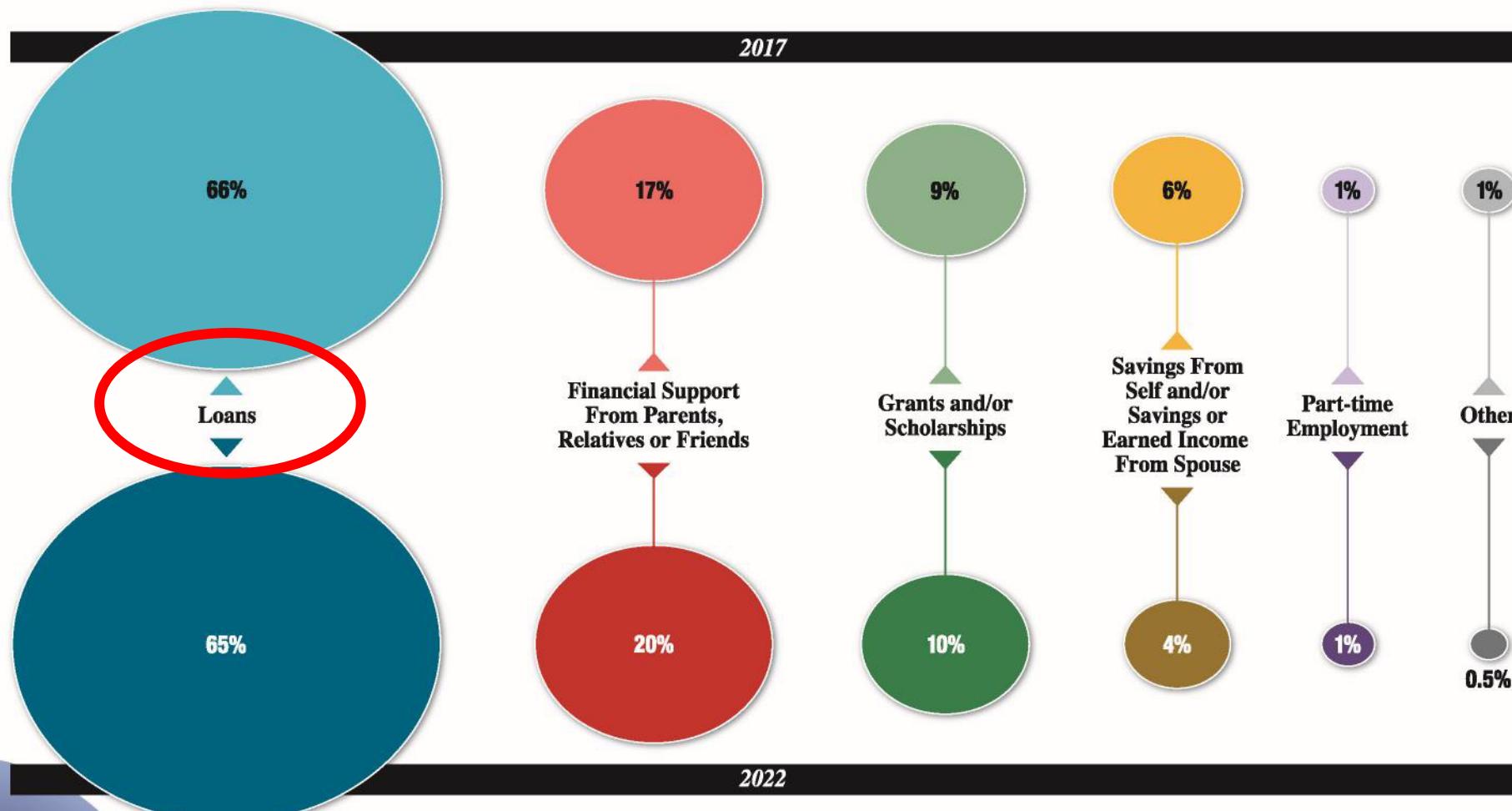


How Are Students Paying for Dental School?

The senior predoctoral students of the Class of 2022 responding to the ADEA survey are funding their dental education with loans and using grants and scholarships at about the same rate as the Class of 2017 respondents to the ADEA Senior Survey. Federal loans remain the top source of debt for financing dental school.



Funding Sources for Dental Doctoral Education, Average of the Percentage of Each Funding Source as Stated by ADEA Survey Respondents, 2017 and 2022



Dental Loan Repayment Programs*

National Health Service Corps (Federal)

CA State Loan Repayment Program (HCAI)

CA Dental Corps Loan Repayment (CDB)

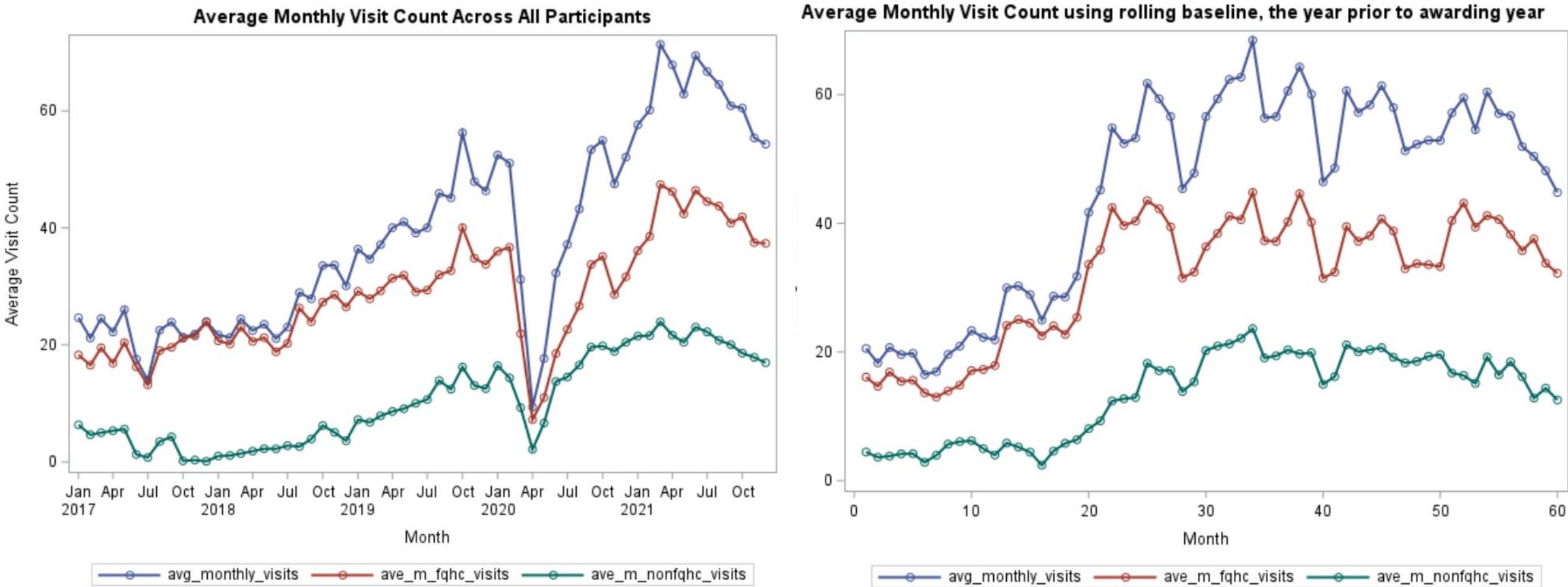
CalCares (Prop 56)

CDA Loan Repayment Program (retired in 2022)

**no estimate available on cumulative number of participants per year*

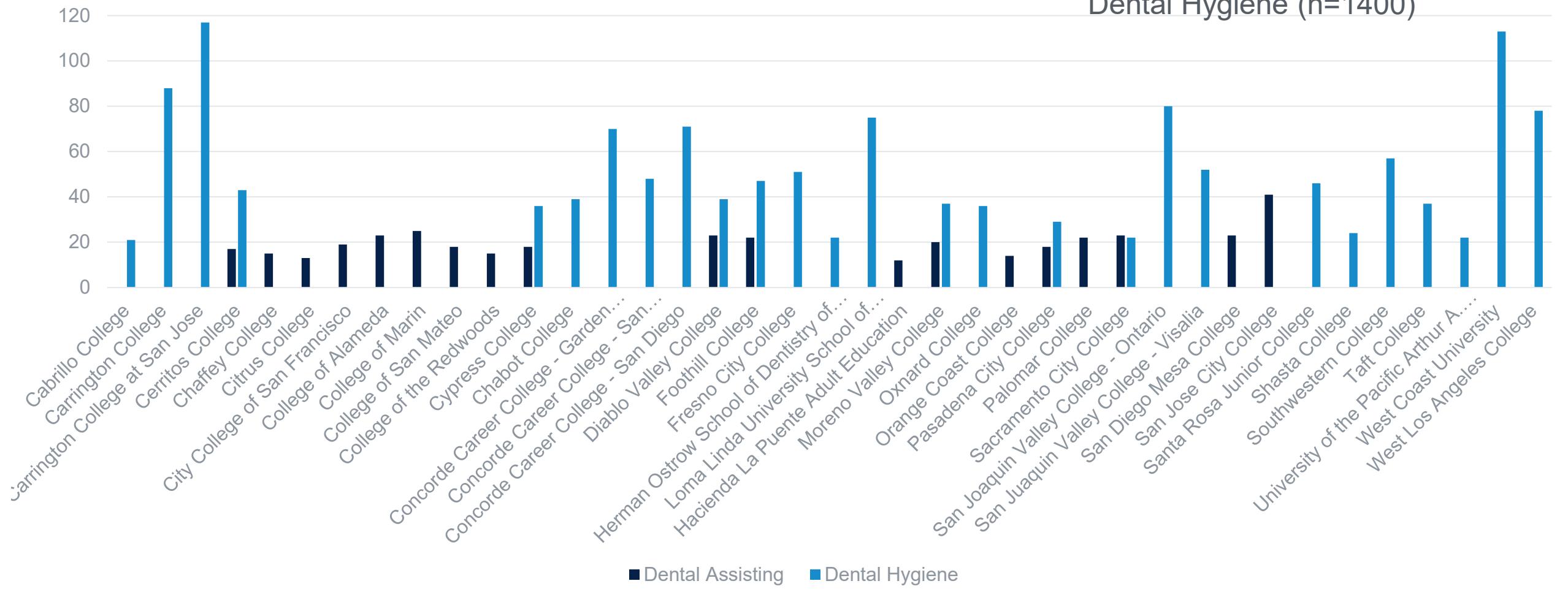
Notes: Percentages may add up to more than 100% due to rounding. The number of respondents to this question was 2,871 in 2022 and 4,882 in 2017.
Sources: American Dental Education Association. Surveys of Dental School Seniors, Classes of 2017 and 2022.

Visit impact of Proposition 56 Dental Loan Repayment Program (CalHealthCares) on for Medi-Cal Patients

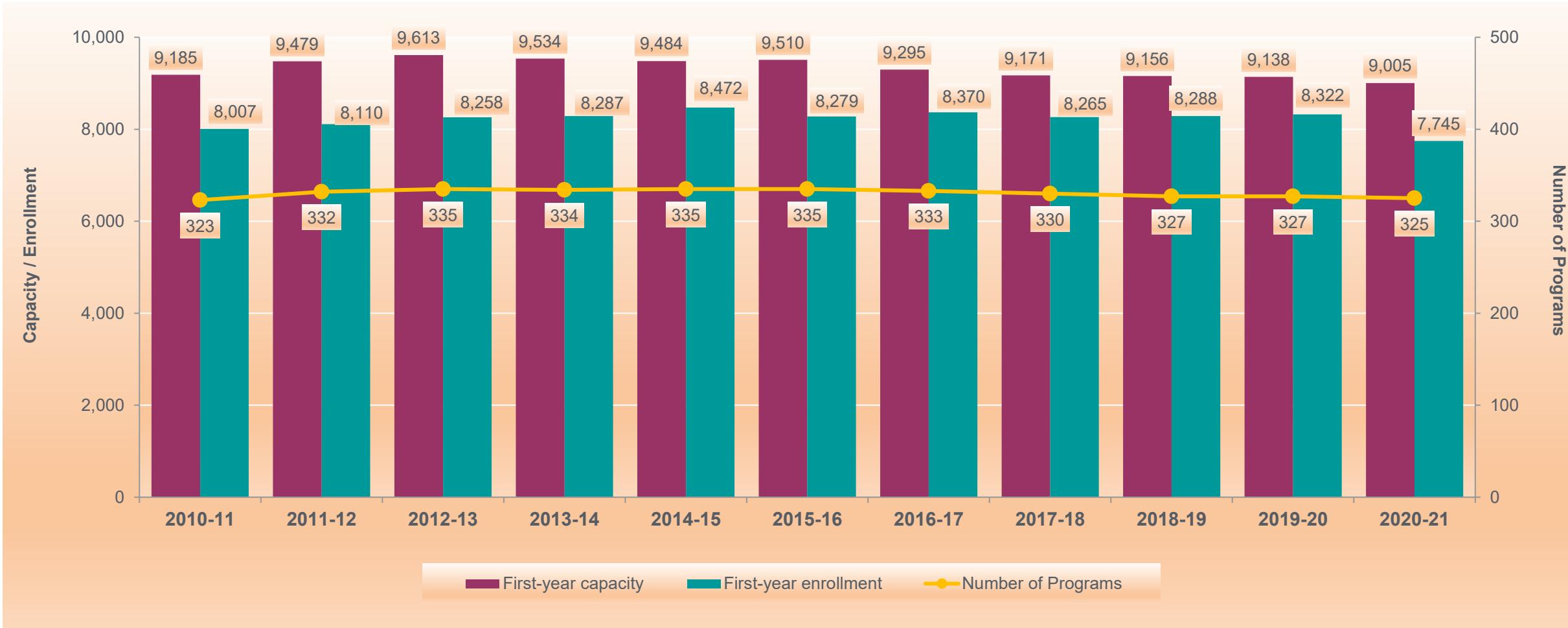


Total Enrollment in Allied Educational Programs (2021-2022)

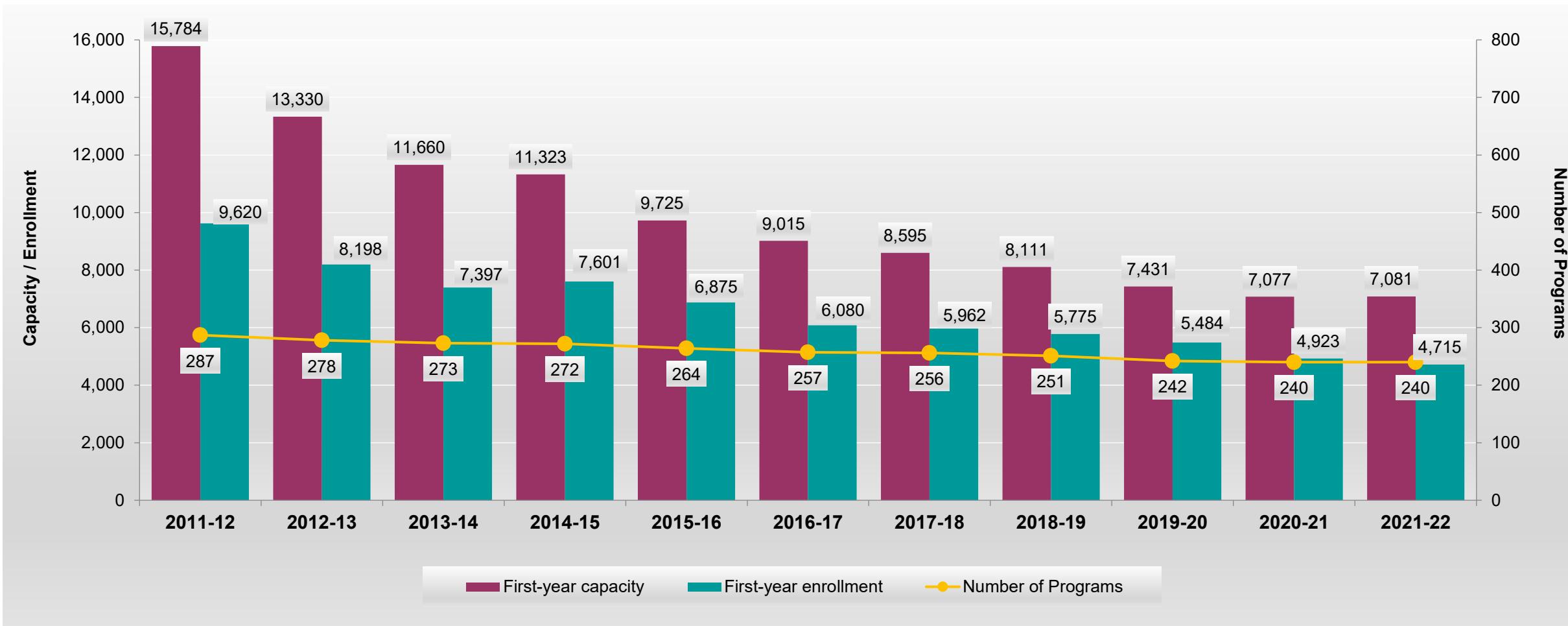
Dental Assisting (n=381)
Dental Hygiene (n=1400)



First-Year Student Capacity Versus Enrollment by Number of Dental Hygiene Programs in the US, 2010-11 to 2020-21



First-Year Student Capacity Versus Enrollment by Number of Dental Assisting Programs in the US, 2011-12 to 2021-22



Key Facts About Allied Workforce Shortages

- In November 2021, 87% of dental offices reported that when compared to pre-pandemic, it was extremely challenging to recruit and hire dental assistants
- In the same survey, 44% of dental offices identified that trouble filling vacant staff positions has limited their practice's ability to treat more patients
- Additionally, it is estimated that over the last 10 years, there has been a nearly 50% decline in the number of first-year enrollment in dental assistant education programs
- The educational pipeline for DA and DH is stagnant or declining, and most programs are not operating at capacity due to faculty shortages and lack of clinical placement sites.

National Research On Oral Health Workforce Shortages

- Vacant DA and DH positions have reduced dental practice capacity by 10% nationally. COVID impacted these largely female occupations similar to many others in health care
- One third of the DA and DH workforce indicate they intend to retire in the next five years
- Many who have left did so voluntarily due to dissatisfaction

TOP 3 REASONS FOR DISSATISFACTION AT WORK

DENTAL ASSISTANTS

1. Insufficient pay
2. Overworked
3. Workplace culture

DENTAL HYGIENISTS

1. Workplace culture
2. Insufficient pay
3. Overworked



Dental Workforce
Shortages:
Data to Navigate
Today's Labor Market



Dental Provider Participation and Access for Medi-Cal Enrollees

Medi-Cal Dental Policy Timeline 2009-Present

CalAIM (January 2022) ➔

2009	2014	May 2014	Jan 2016	July 2015	Jul 2016	Jul 2017	Jan 2018	Jul 2018	May 2019	Sep 2019	May 2020	Jun 2021
Elimination of adult benefits (with phase out)	ACA expanded Medi-Cal	Partial adult benefits (AB82)	DTI initiated (focus on children)*	10% fee increase	HRSA OHSE grants	Prop 56 suppl. payments for specific CDT codes	Full adult benefits (SB97)	Prop 56 suppl. payments expanded	FY18-19 loan repay. award	HRSA OHI grants	FY19-20 loan repay. award	FY20-21 loan repay. award

↓ State Auditor's Report ↓ Little Hoover Commission #1 ↓ Little Hoover Commission #2 ↓ Master Plan on Aging (2021)

* Impact on service would vary by demonstration pilot sites, which also vary by domains and counties

ACA = Affordable Care Act; DTI = Dental Transformation Initiative; HRSA = Health Resources and Services Administration; OHSE = oral health service expansion; suppl. = supplemental; repay. = repayment; OHI = oral health infrastructure; CDT = dental procedure codes

Dental Transformation Initiative

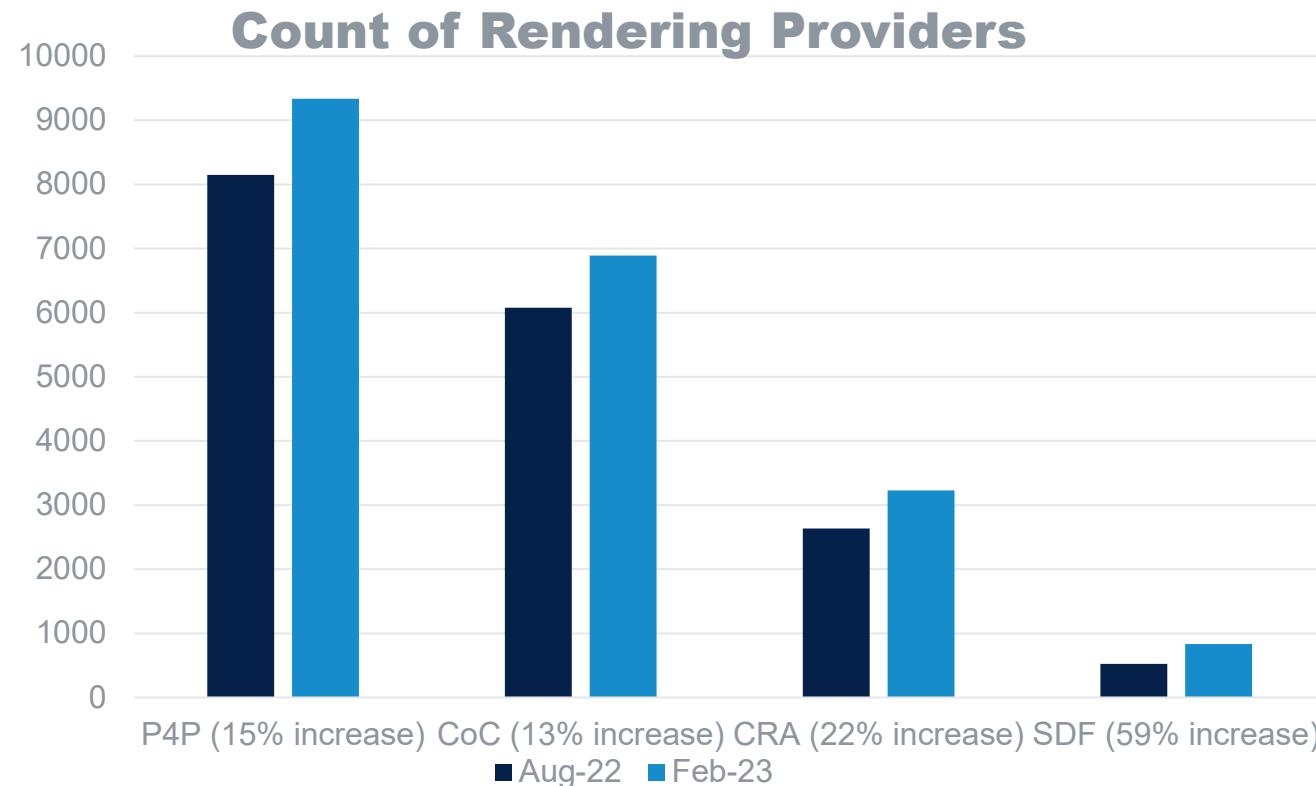
- January 2016-December 2020, waiver extension through 2021
- Four domains of innovation (age 1-20) which varied by geography and over time
 - Increase preventive services
 - Caries risk assessment
 - Continuity of care
 - Local dental pilot projects
- Interim report released with mixed results through 2018
- Final report released in June 2023
 - <https://www.dhcs.ca.gov/provgovpart/Documents/DTI-Evaluation-Final-Report.pdf>
 - The evaluation also found that much of the increase in preventive service use was due to Safety Net Clinics increasing the number of children enrolled in Medi-Cal they serve. This finding suggests that participation in Medi-Cal among office-based dental providers might need to remain a priority area if California wishes to increase access further.
 - The evaluation found no evidence that DTI widened the pool of dental providers participating in Medi-Cal. In fact, they found essentially the same number of dental providers providing preventive services to children enrolled in Medi-Cal in 2019 as was observed in 2015, the year before DTI.

CalAIM Dental Initiatives

Extends work started in DTI

DHCS set a goal to achieve at least a 60% dental utilization rate for Medi-Cal eligible children.

- Expanded pay-for-performance (P4P) payments that reward increasing the use of preventive services and establishing/maintaining continuity of care (CoC) through a dental home
- Caries Risk Assessment (CRA) Bundle for young children
- Silver Diamine Fluoride (SDF) for young children and specified high-risk and institutional populations



DENTAL CARE UTILIZATION RATE FOR CHILDREN

Percentage of children who saw a dentist in the last 12 months.

HPI Health Policy Institute

ADA American Dental Association®

PUBLICLY INSURED CHILDREN (MEDICAID)

47%

United States

46%

California

PRIVATELY INSURED CHILDREN

66%

United States

69%

California

DENTAL CARE UTILIZATION BY STATE (2021)

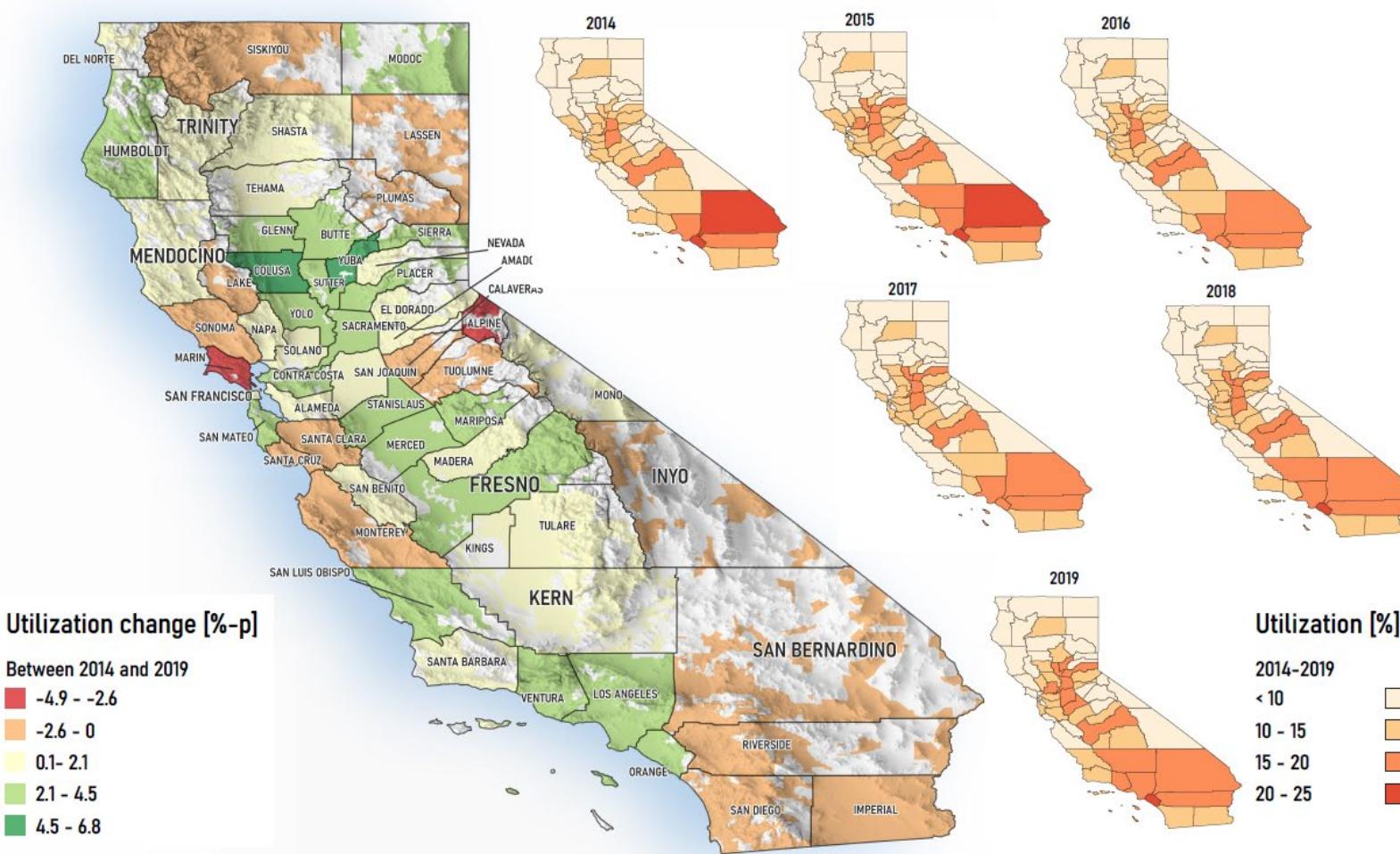
■ Medicaid Insured ■ Privately Insured



PUBLICLY INSURED

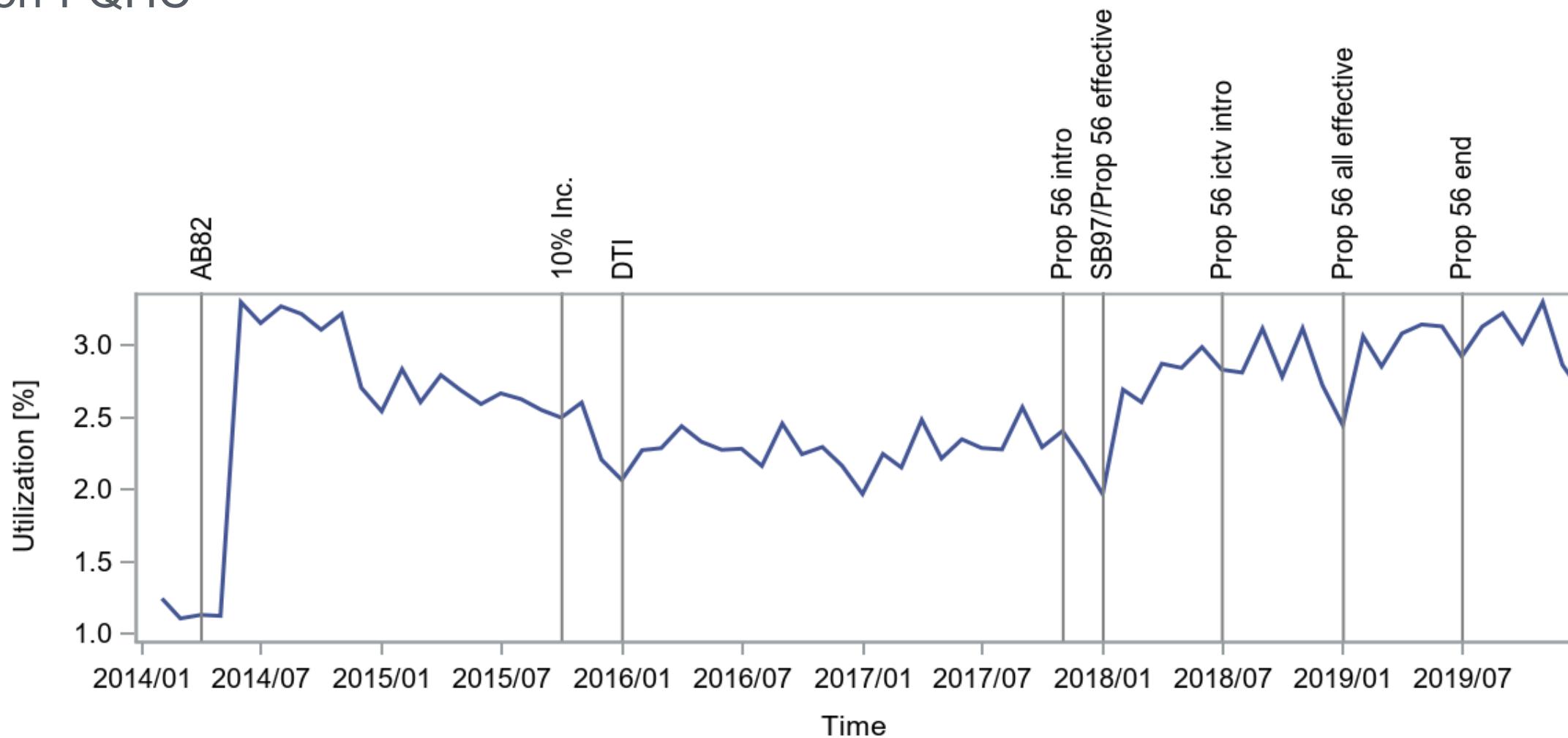
PRIVATELY INSURED

Adult Utilization was Mixed in Non-FHQC Settings Prior to COVID Across the State

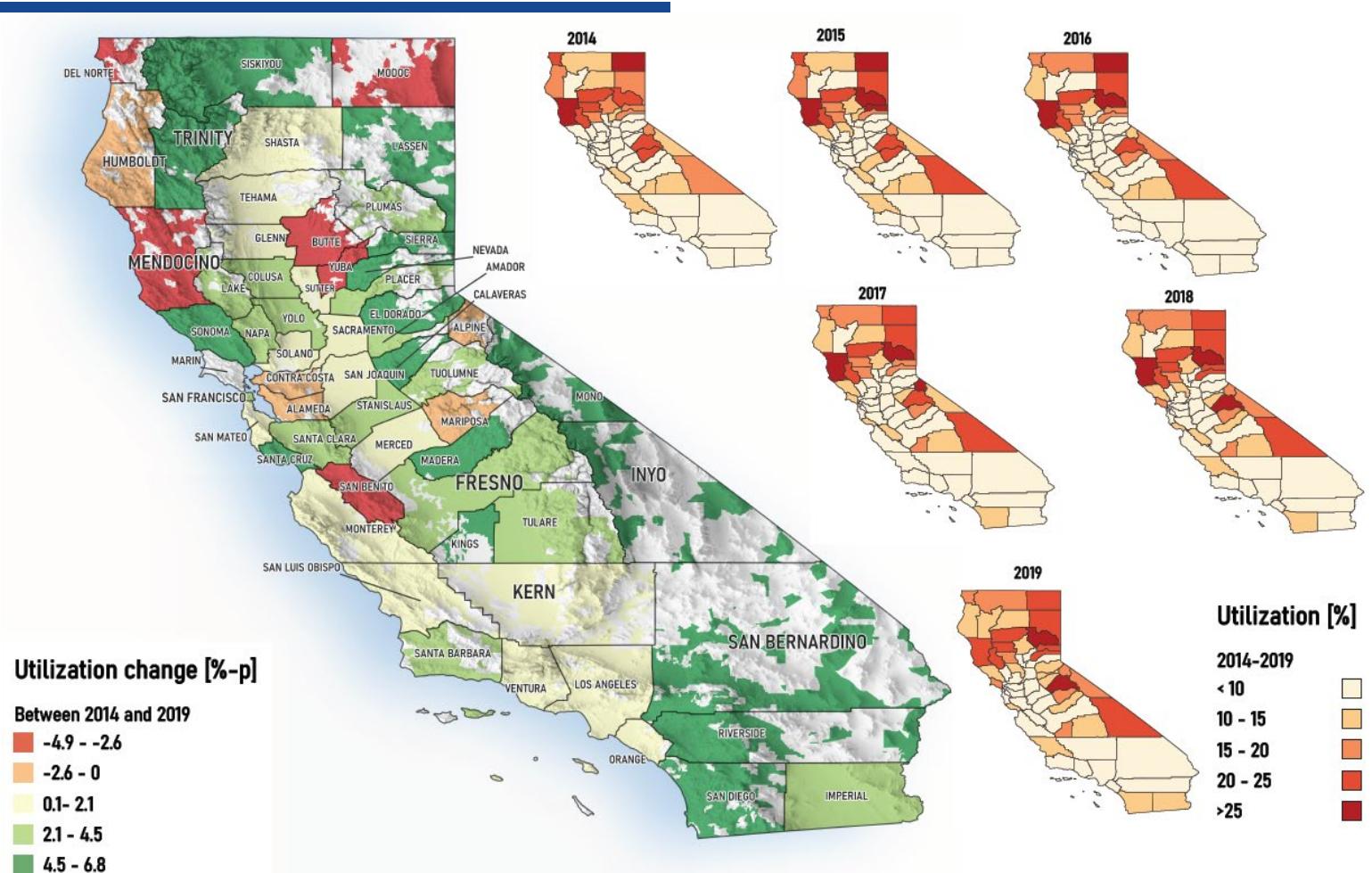


Monthly adult utilization by setting of care

Non-FQHC

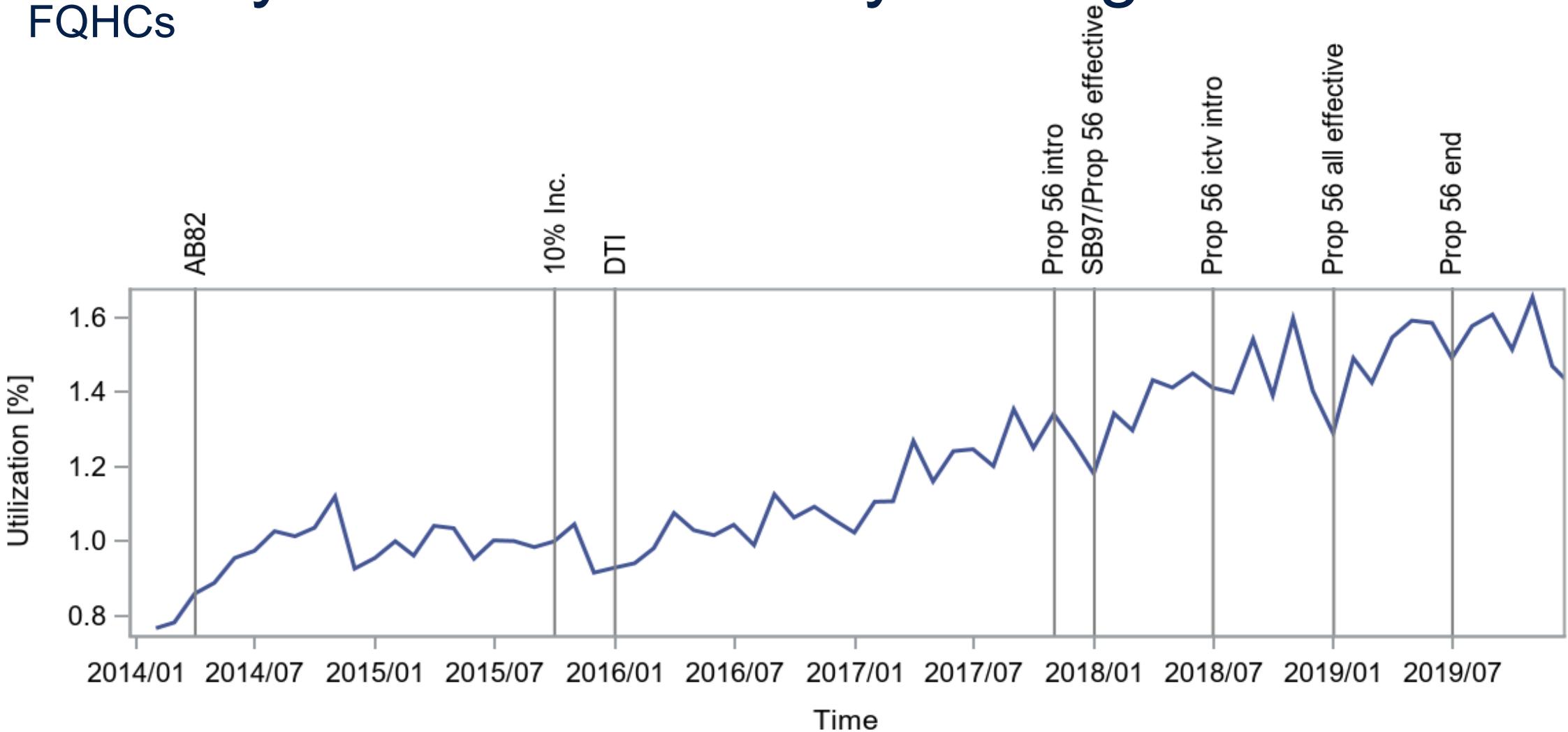


Adult Utilization in FQHCs Increased Until COVID in Most Counties



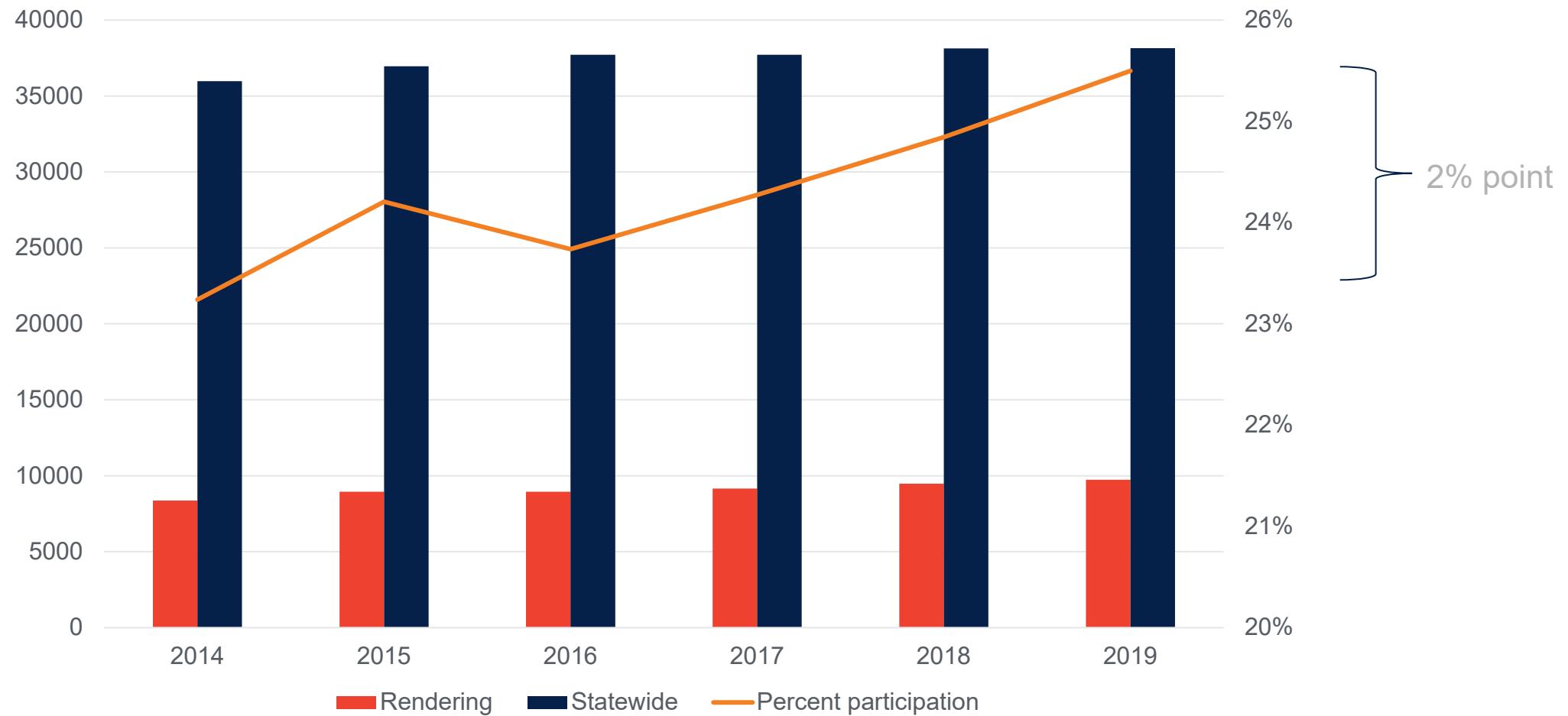
Monthly adult utilization by setting of care

FQHCs



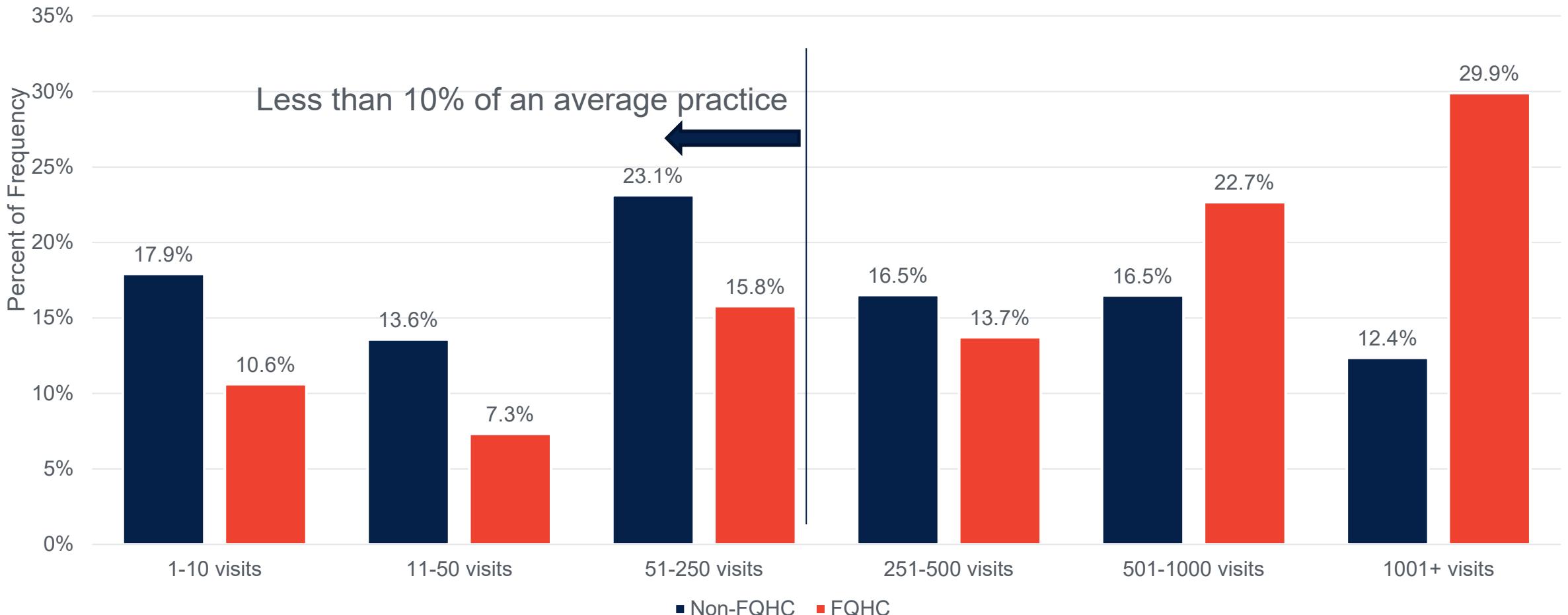
Providers

Rendering* vs. all active licensees in California**

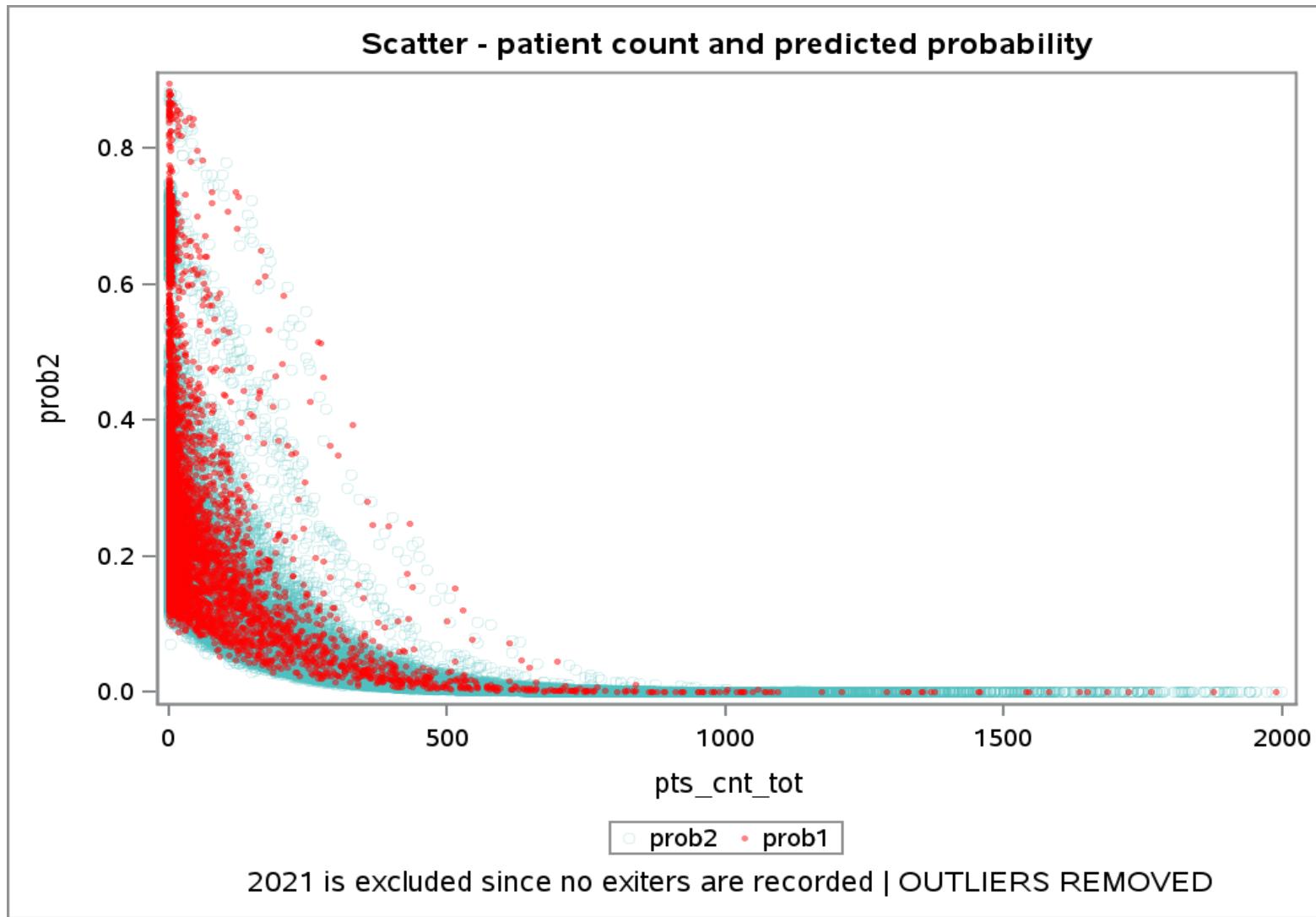


Extent of Provider Participation

Distribution of **adult** visits per rendering provider, 2019



Predicting dentist enrollment exits from Medi-Cal Dental.



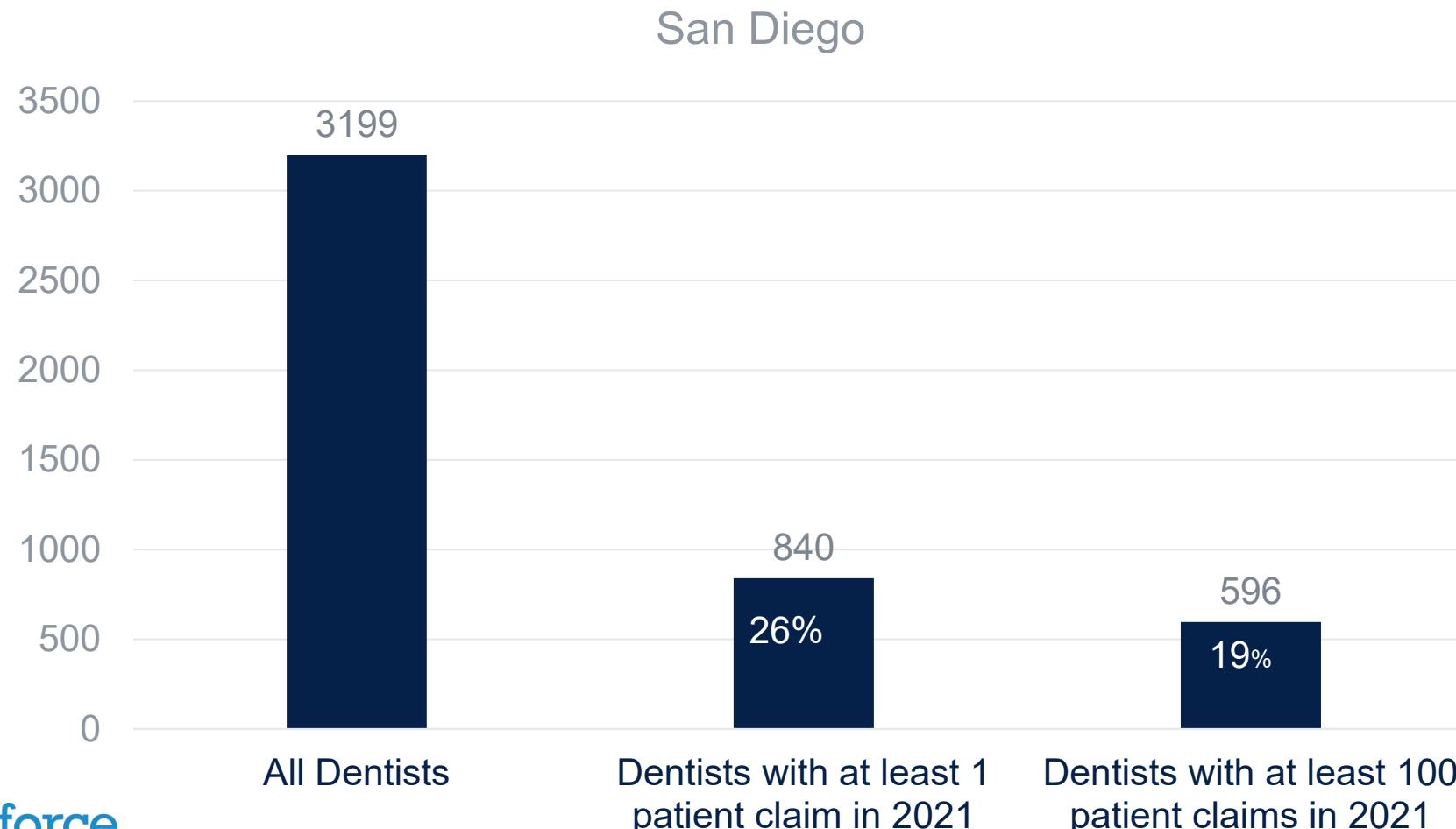
Racial/ethnic concordance

Average percent of adult Medicaid patient population by provider race/ethnicity, 2019

Race/ethnicity of provider	Average percent of patient population of each racial/ethnic group						
	American Indian or Alaska Native	Asian	Black	Hispanic	Native Hawaiian or Pacific Islander	Unknown or Missing	White
American Indian or Alaska Native	5%	9%	6%	38%	2%	11%	29%
Asian	0%	19%	7%	39%	4%	14%	17%
Black or African American	2%	4%	22%	39%	2%	14%	18%
Hispanic	1%	5%	6%	56%	2%	14%	16%
Native Hawaiian or Pacific Islander	1%	15%	4%	43%	2%	14%	20%
Unknown or Missing	1%	7%	9%	40%	3%	15%	26%
White	1%	4%	9%	40%	2%	16%	28%

Medi-Cal Participation by Dentists in San Diego (2021)

- 29% of the county's population is enrolled in Medicaid



Current oral health workforce policy approaches

State and national resources

Expanding Oral Health Workforce Capacity

- Expand the care team both inside and outside the dental office
 - New types of providers
 - Dental Therapists
 - Community Dental Health Coordinators (CHWs)
 - Scope of practice changes for existing providers
 - Expanded practice, public health practice
 - Integration of oral health into primary care practice
 - Physician fluoride varnish application
 - Co-location of medical-dental care
 - Mobile/Portable dental care services
 - K-12 schools,
 - Long term care settings

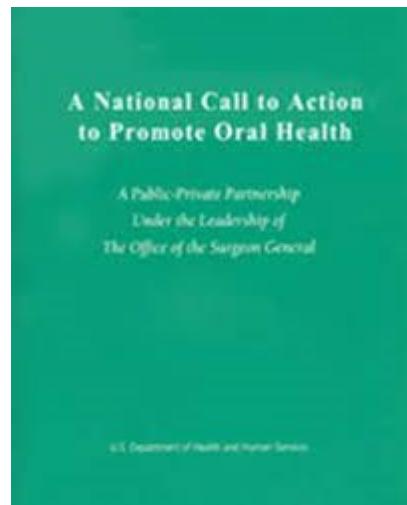
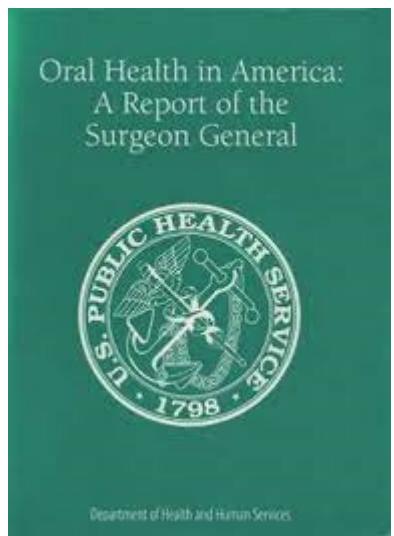
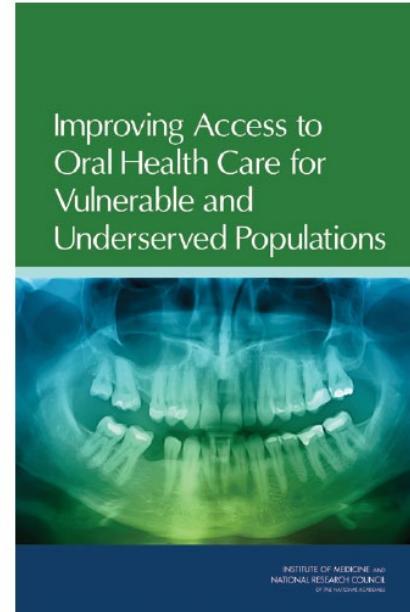
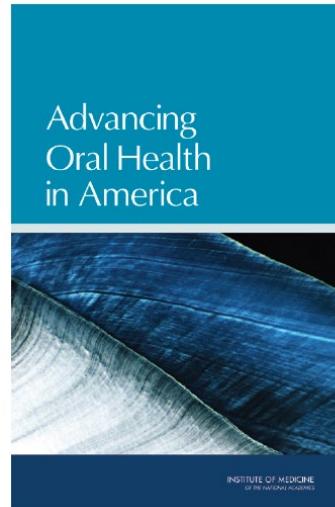
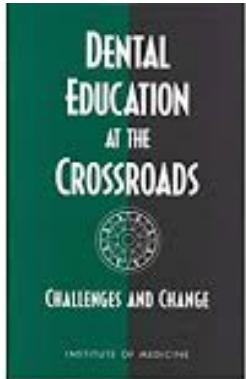
Expanding Oral Health Workforce Flexibility

- Use information technology to reach more patients
 - CA has pioneered teledentistry as part of DTI (virtual dental home model)
 - Teledentistry has expanded nationally since COVID, particularly in safety net settings
 - Referral/Tracking system development to connect community screening to treatment when needed
- New treatment modalities with a focus on public health settings
 - Silver Diamine Fluoride (SDF)
 - Sealants
 - Fluoride Varnish
- Supervision requirements
 - In particular, dental hygiene has become much more flexible in the past 20 years due to supervision requirement changes

Expanding Oral Health Workforce Diversity

- Mentoring, bridge, pathway & post-baccalaureate programs
- Dental school admissions policies (i.e. holistic review)
- Scholarship & loan repayment for service
- Health professions education diversity grants
- HRSA scholarships & training programs
- Licensing foreign-trained providers
- Expanding dental team

National Resources



California Resources

California Department of Public Health

Status of Oral Health in California:
Oral Disease Burden and Prevention 2017



Healthforce
Center at UCSF



Center
for Oral
Health



We catalyze a network to take on America's oral health challenges so that everyone has an equitable chance to thrive.

f t i in



Technical Assistance Center

CDPH Office of Oral Health ▾

Toolkits ▾

Our Prog...

The California Oral Health Technical Assistance Center (COHTAC) provides support and resources to help local oral health programs achieve their goals.

We are a group of UCSF faculty, researchers, and staff with expertise in oral health. We work in partnership with the California Department of Public Health's Office of Oral Health Program and the UCSF Dental Public Health Postgraduate Program to create a healthier California through evidence-based strategies.

Programs

Our focus is on three areas, recognized by the CDC as fundamental to improve community oral health:

- [School Oral Health Programs & KOHA](#)
- [Tobacco Cessation](#)
- [Water Fluoridation](#)
- [Results Based Accountability \(RBA\)](#)

Phased Strategies
for Reducing the
Barriers to Dental
Care in California

California Dental Association
Access Report



Events

TUE 29 What Dental Providers Need to Know about HP...

Date: August 29, 2023
Time: 6:30-8:00 PM PDT

WED 30 Increasing the Proportion of Children and...

Date: August 30, 2023
Time: 10:00 AM PDT

Key Take Aways

- Highest ratio of dentist to population in the US, yet allied dental shortages are pervasive, geographic distribution and workforce diversity remain problematic.
- Participation by dental providers, and access for populations enrolled in Medi-Cal, particularly for adults, is abysmal.
- Loan repayment is the primary tool being used for recruitment and retention in the safety-net/underserved communities. Minoritized dentists continue to disproportionately care for these communities.
- Expansion of oral health infrastructure and workforce in FQHCs led to steady growth in that sector pre-COVID. Other policy interventions to date have not led to a significant expansion of the dental provider workforce in the safety net.
- Accurate, real-time data sources on the dental workforce are disparate, contradictory, and difficult to obtain.

Acknowledgements and Data Sources

- UCSF team
 - Emily Shen and Matthew Jura, PhD, Shuang Liang, MA, Aubri Kotttek, MPH
- HCAI research and evaluation team
 - Eric Neuhauser, MPH, Jaclyn Farrens, Kevin McInturf, Hovik Khosrovian
- Mathematica team
 - Diane Rittenhouse, MD, MPH, Sammie Chavez, MPH
- American Dental Association, Health Policy Institute
 - Marko Vujicic, PhD, Bradley Munson
- American Dental Association, Health Policy Institute, 2021 Masterfile
- American Dental Education Association
- 2012 Survey of Underrepresented Minority Dentists in the US (Mertz et al)
- Oral health workforce research center
- Department of Health Care Access and Information
- Dental Board of California
- Department of Consumer Affairs
- UCLA Center for Health Policy Research