



Agenda Item 4:

California's Oral Health Workforce & Policy

Facilitator: Beth Mertz, Associate Director for Research at Healthforce

Key Facts

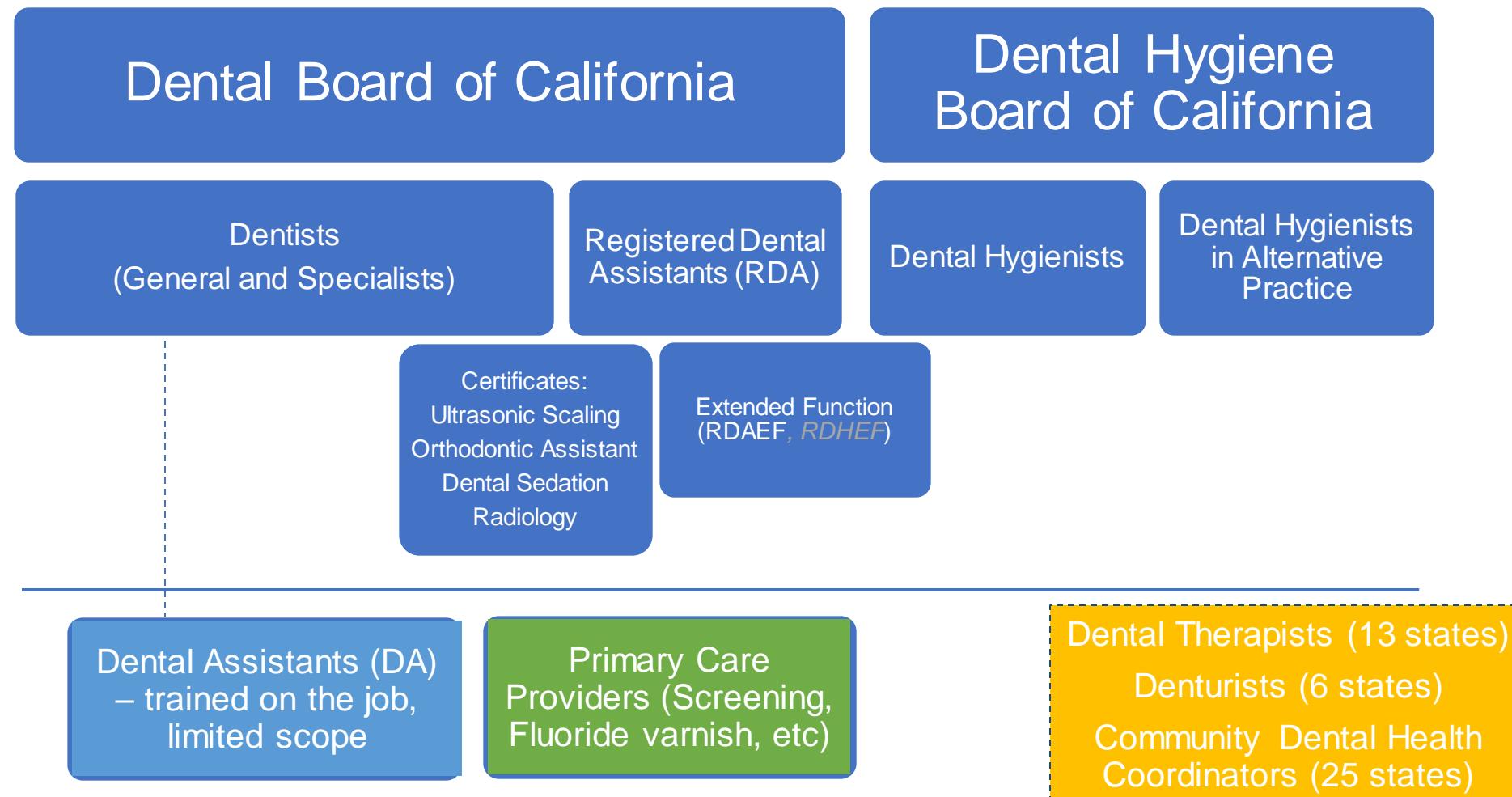
- Oral care remains among the most unmet health needs in the US
- California has the greatest number of dentists per population of any state in the US. Yet, there are 78 population-specific shortage areas, and 15 geographic shortage areas currently listed in the state
- Only 15% of California dentists participate in Medi-Cal in a meaningful way for adult patients (>100 patients/year)
- 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

Outline

- Structure, distribution and supply of the oral health workforce in California
- Oral health provider education in California
- Dental provider participation and access for Medi-Cal enrollees
- Current oral health workforce policy approaches, state and national resources
- Additional data resources (reference only)

Structure, Distribution and Supply of the Oral Health Workforce

Oral Health Workforce: Regulatory Structure



DENTISTS DEMOGRAPHICS

California
2022



All Dentists
30,727

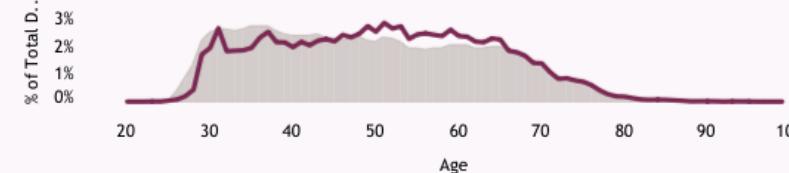


Per 100,000
78.7

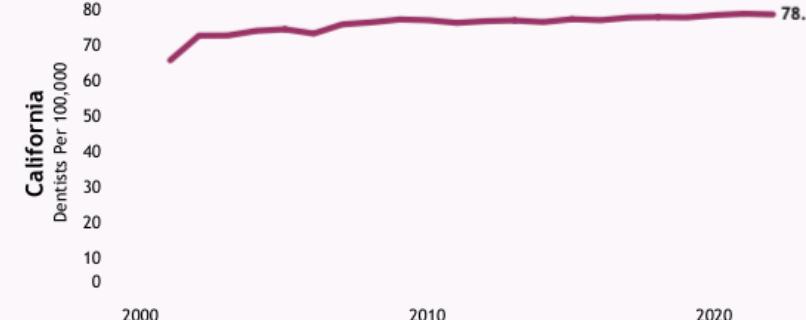


DISTRIBUTION OF DENTIST AGE

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



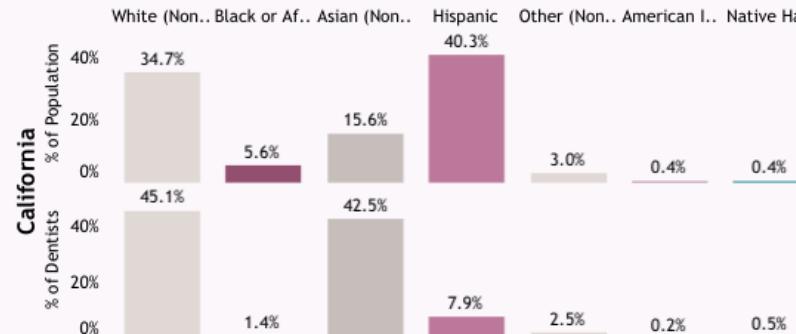
DENTISTS PER CAPITA



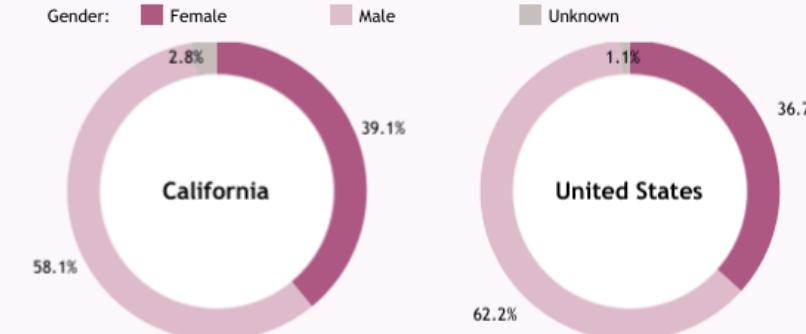
Geography
California
Year
2022



RACE AND ETHNICITY



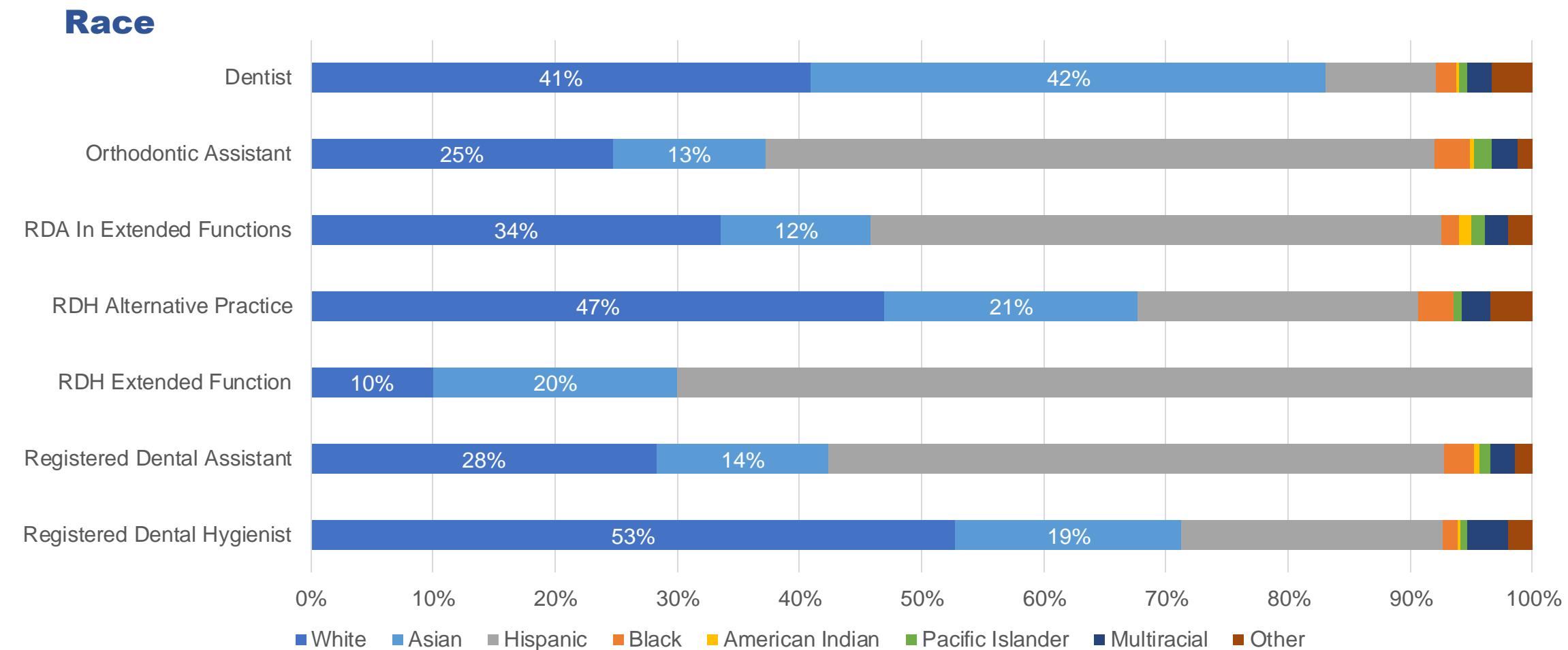
GENDER



PDF

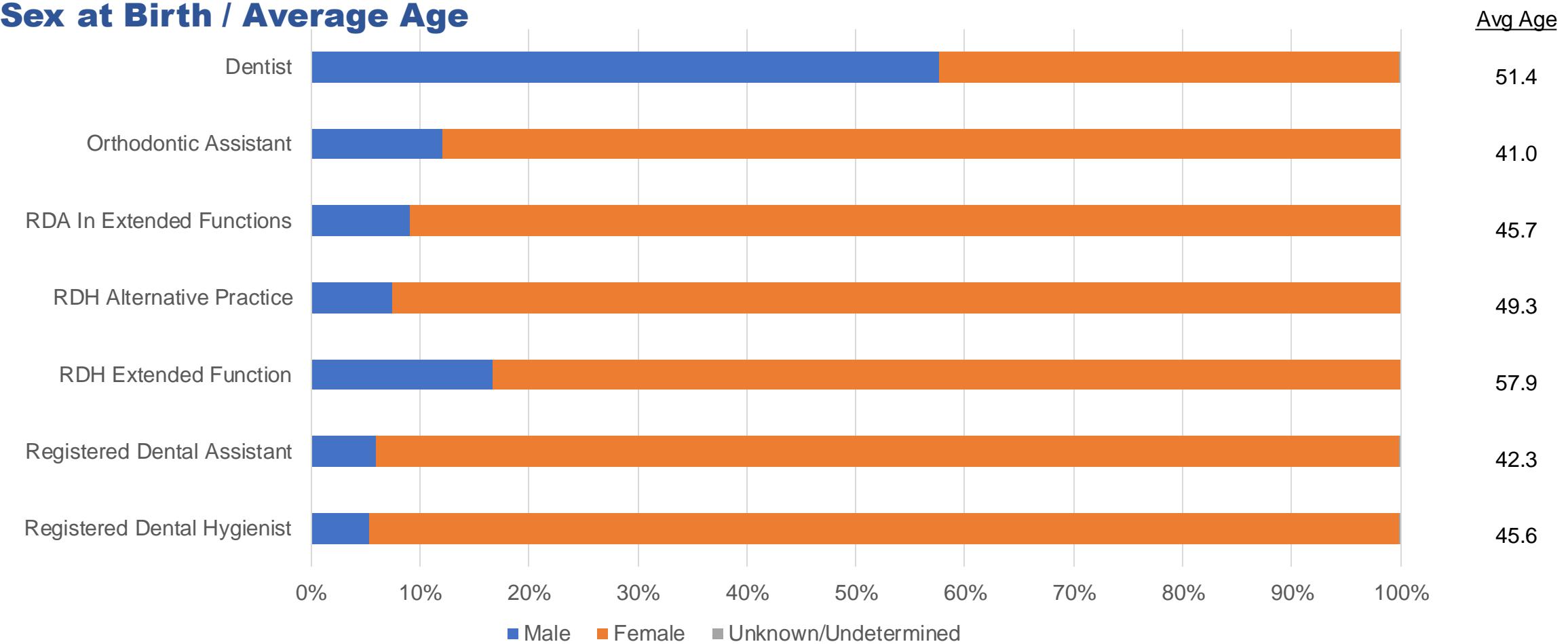


Active License Holders in Dental Occupations (2023)

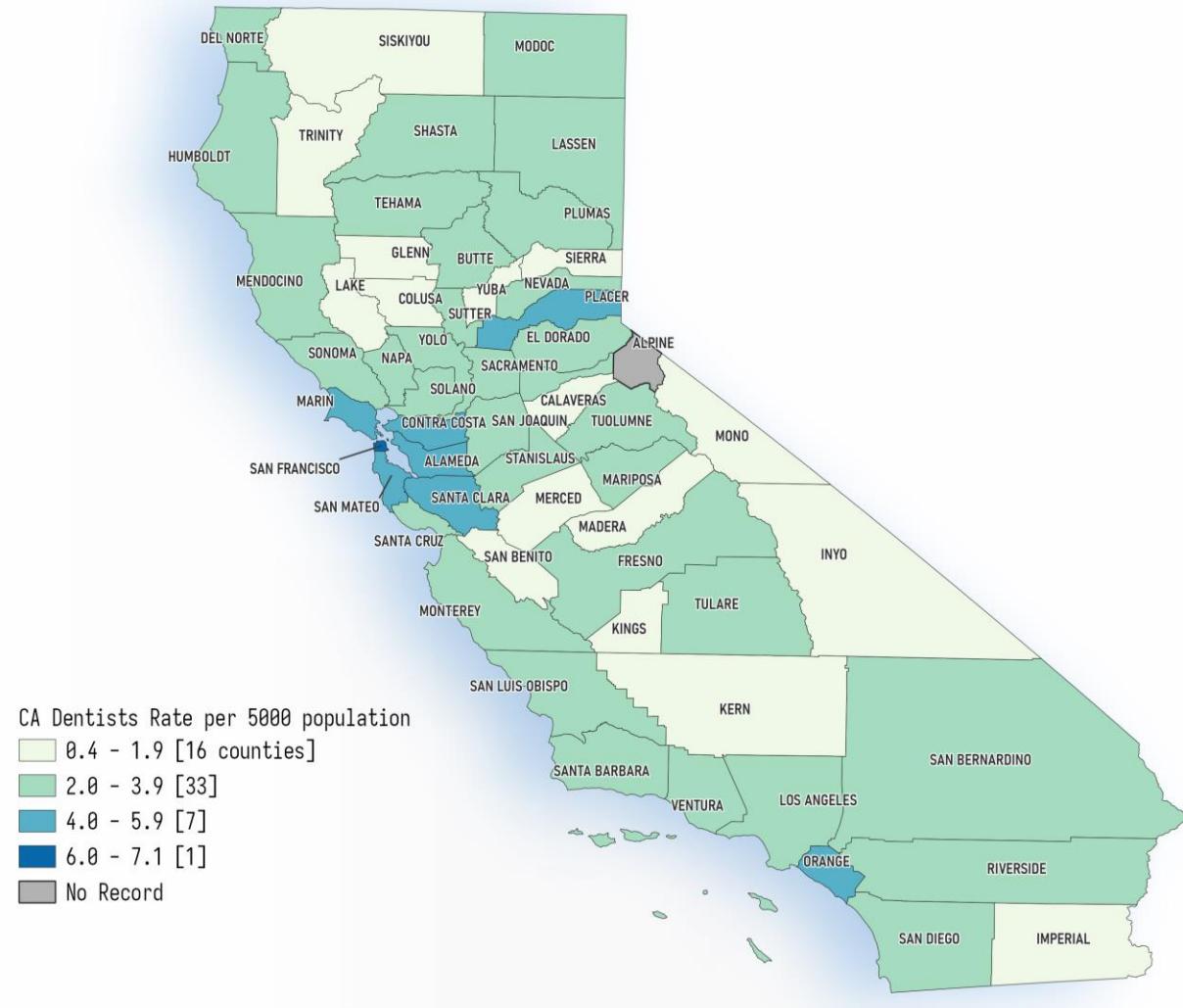


Active License Holders in Dental Occupations (2023)

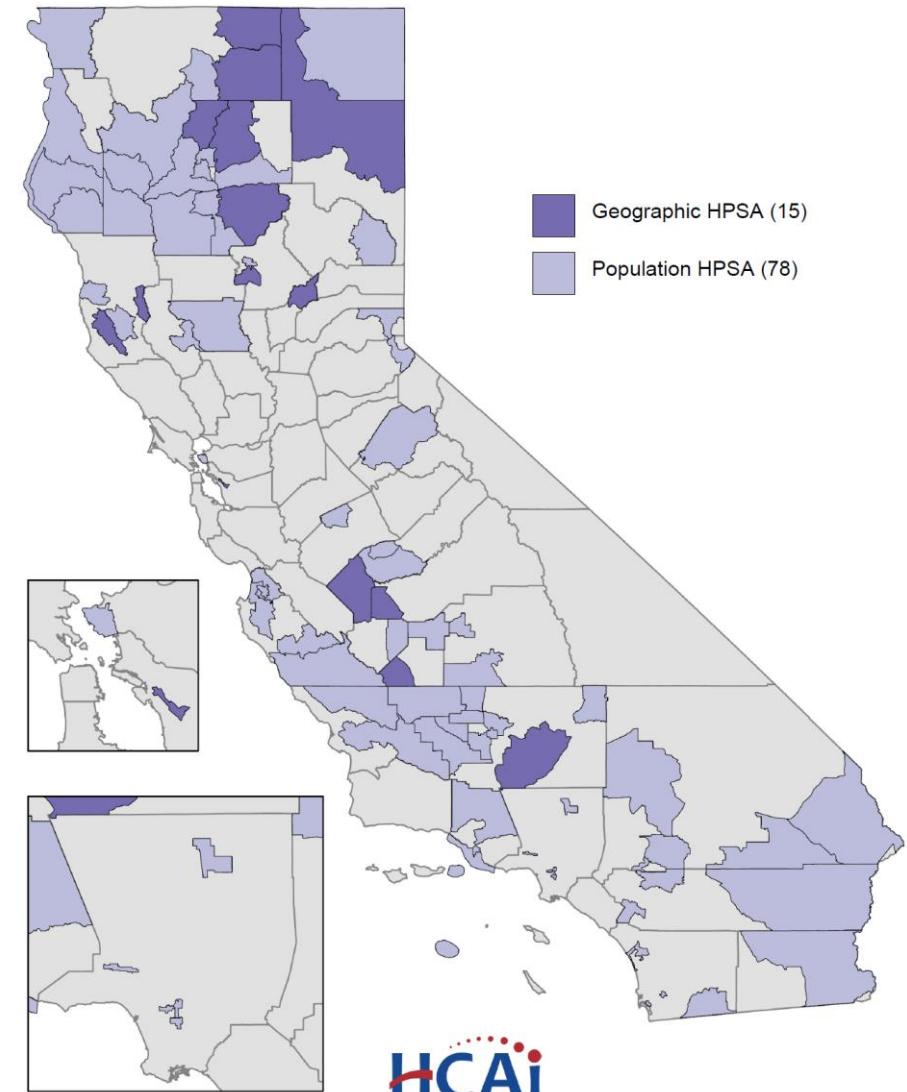
Sex at Birth / Average Age



Dentist Supply (2021)



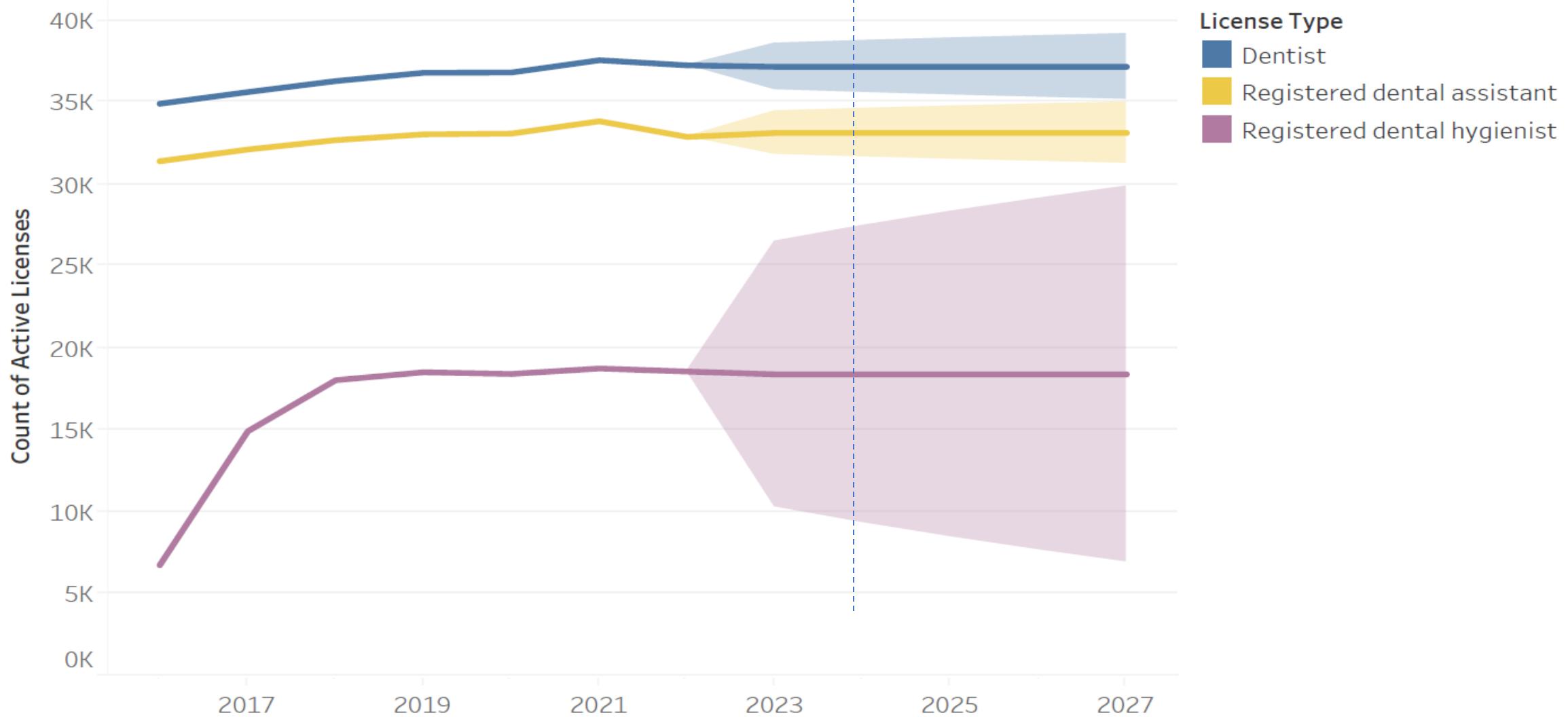
Health Professional Shortage Areas
Dental Health



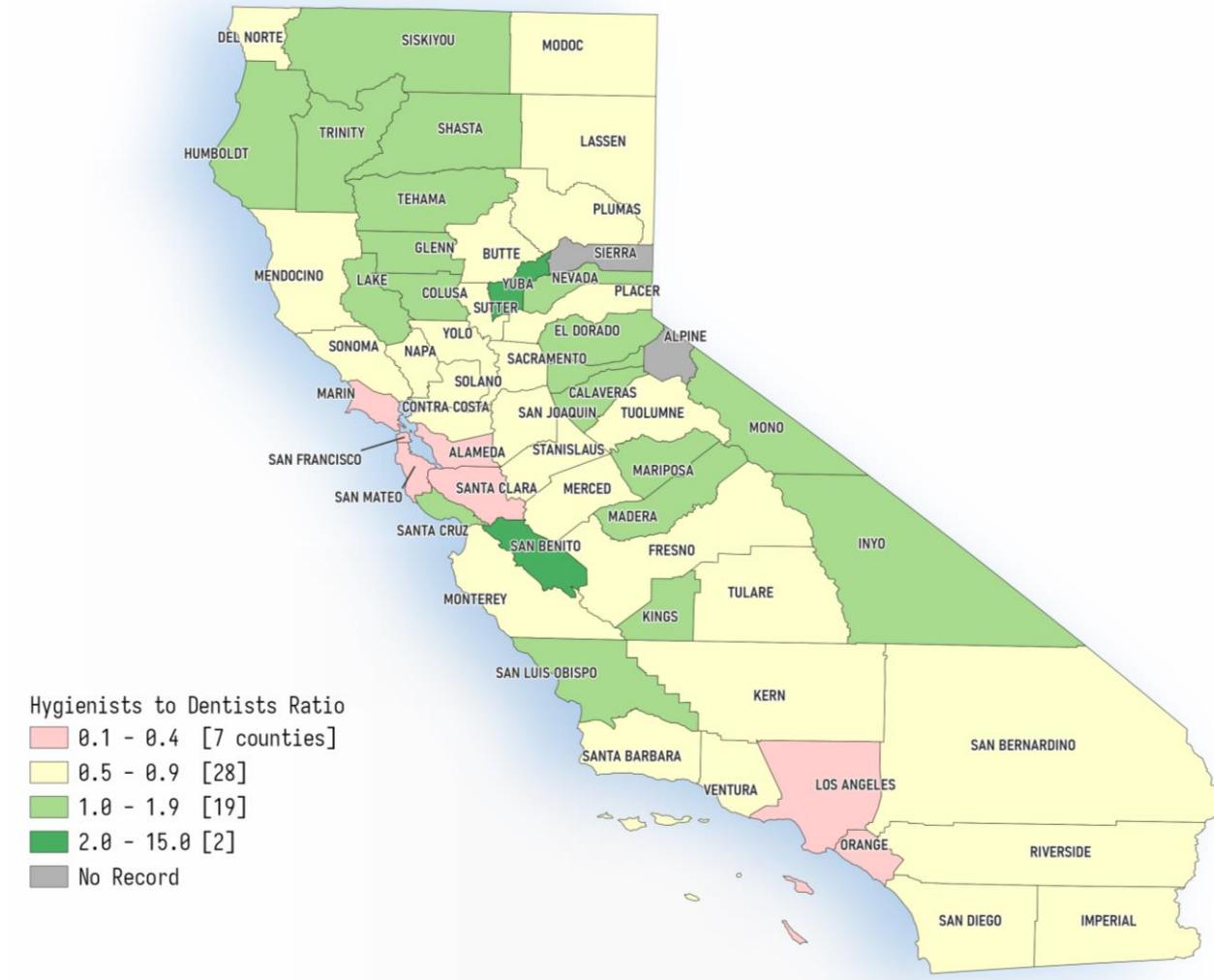
January 2023

Sources: Authors analysis of 2021 ADA masterfile data and 2020 census population data
<https://data.chhs.ca.gov/dataset/health-professional-shortage-areas-in-california>

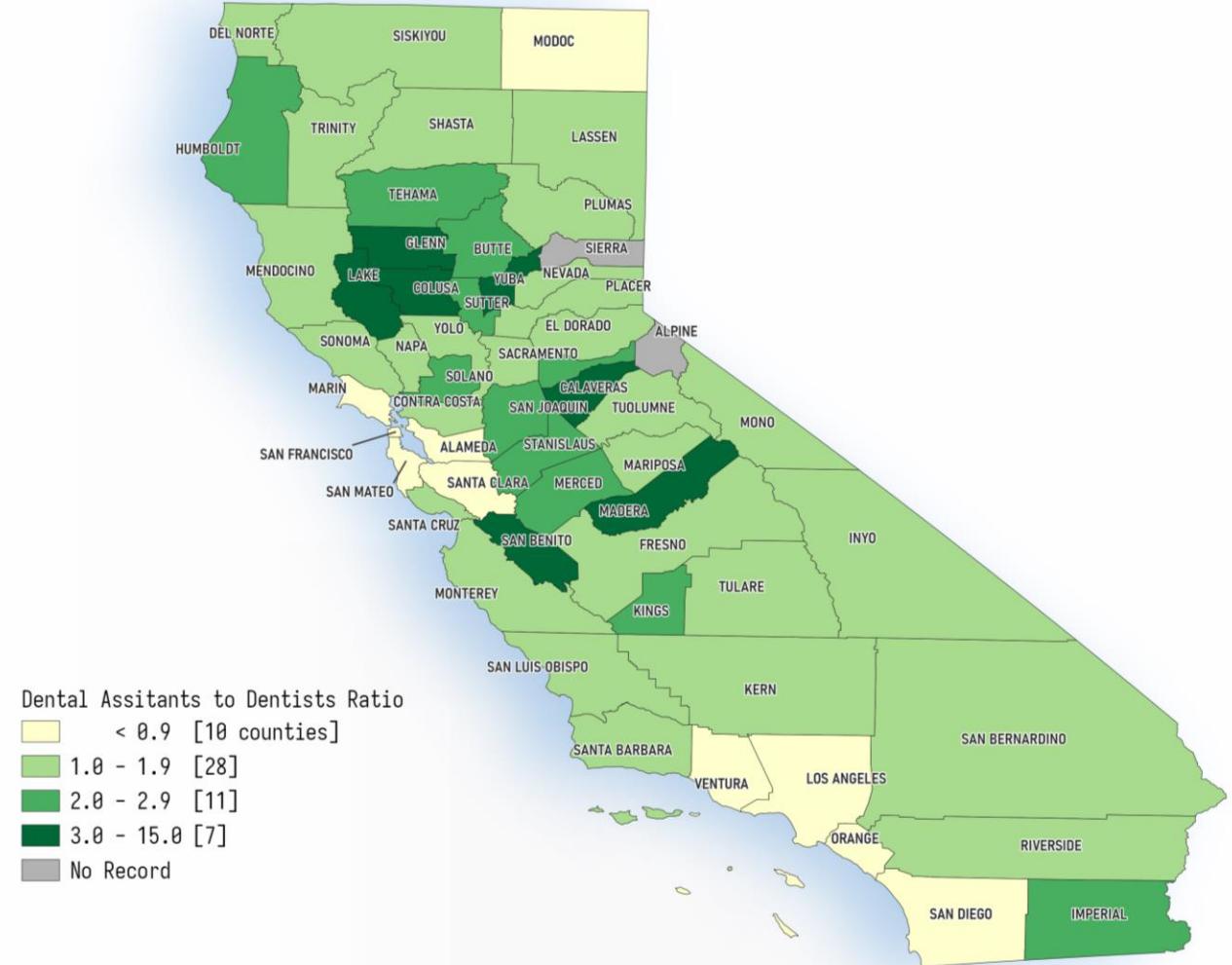
Supply Modeling (2023)



Dental Hygienists

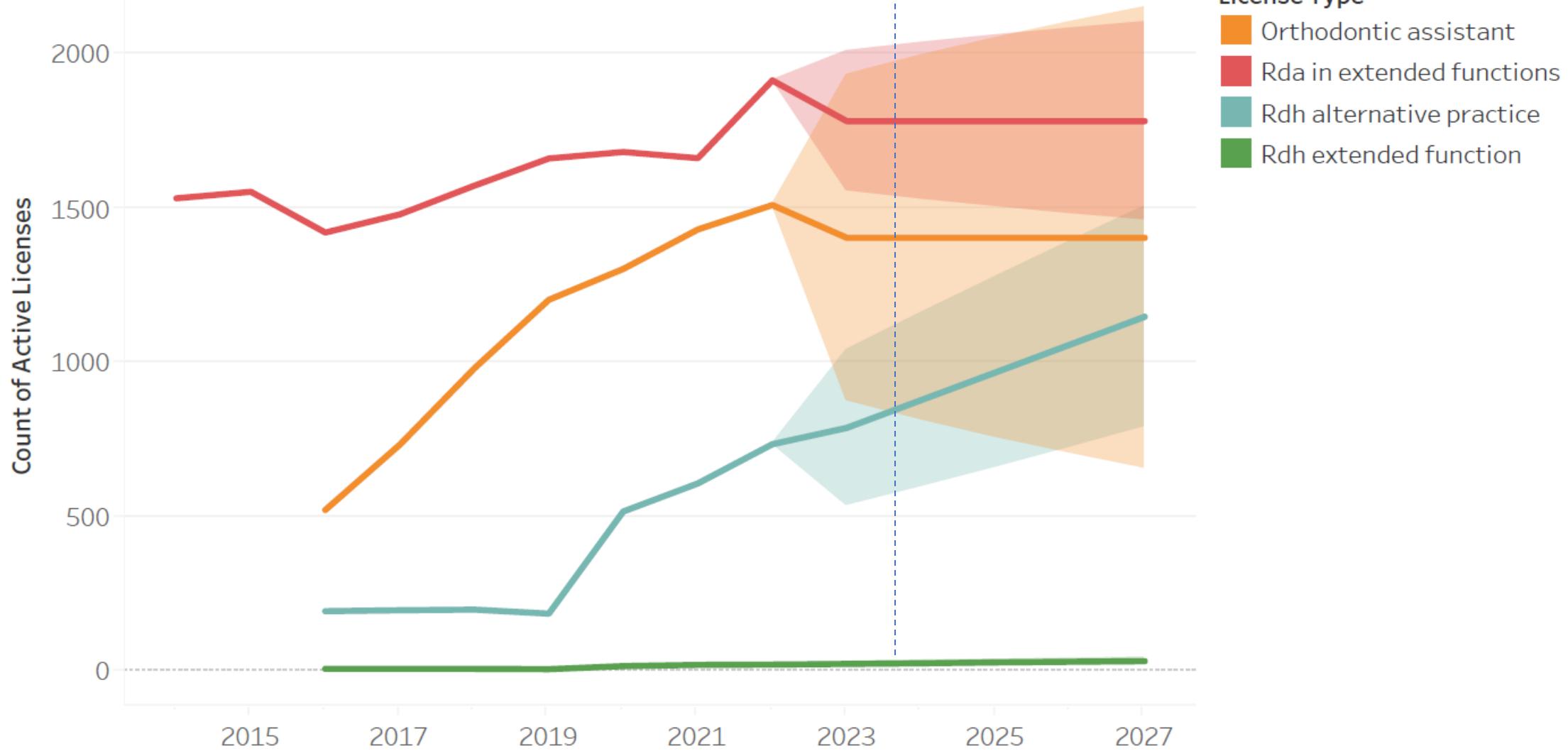


Dental Assistants



Source: https://dca.ca.gov/data/interactive_maps.shtml 2019 data pulled from https://public.tableau.com/shared/RDB3TNRSH?:display_count=y&:origin=viz_share_link&:embed=y.

Supply Modeling (2023)



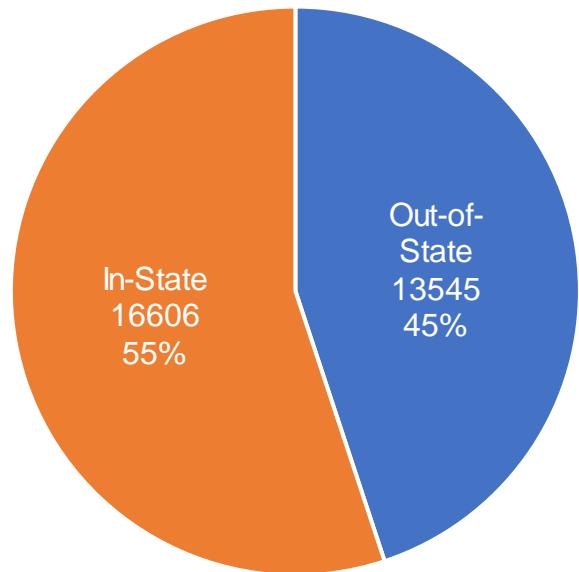
Source: Office of Health Workforce Development, HCAI, August 2023

Active Dentists in CA (2021)

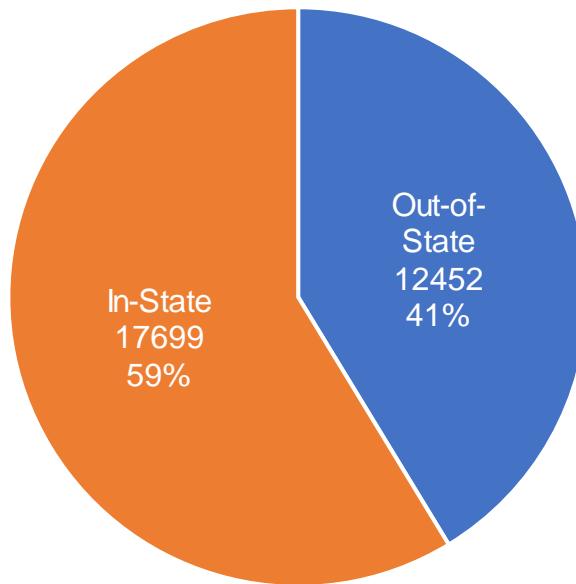
Majority are educated In-State vs. Out-of-State

Total: 30,151 Dentists actively practicing in CA

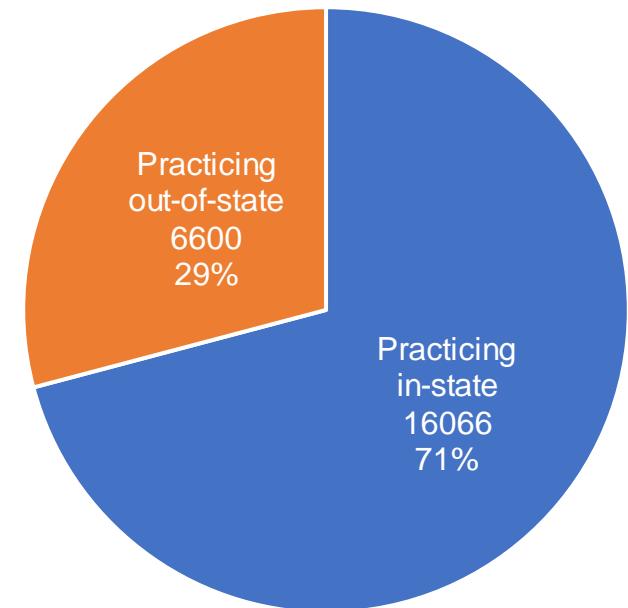
Dental Education (first degree)



First degree or advanced education



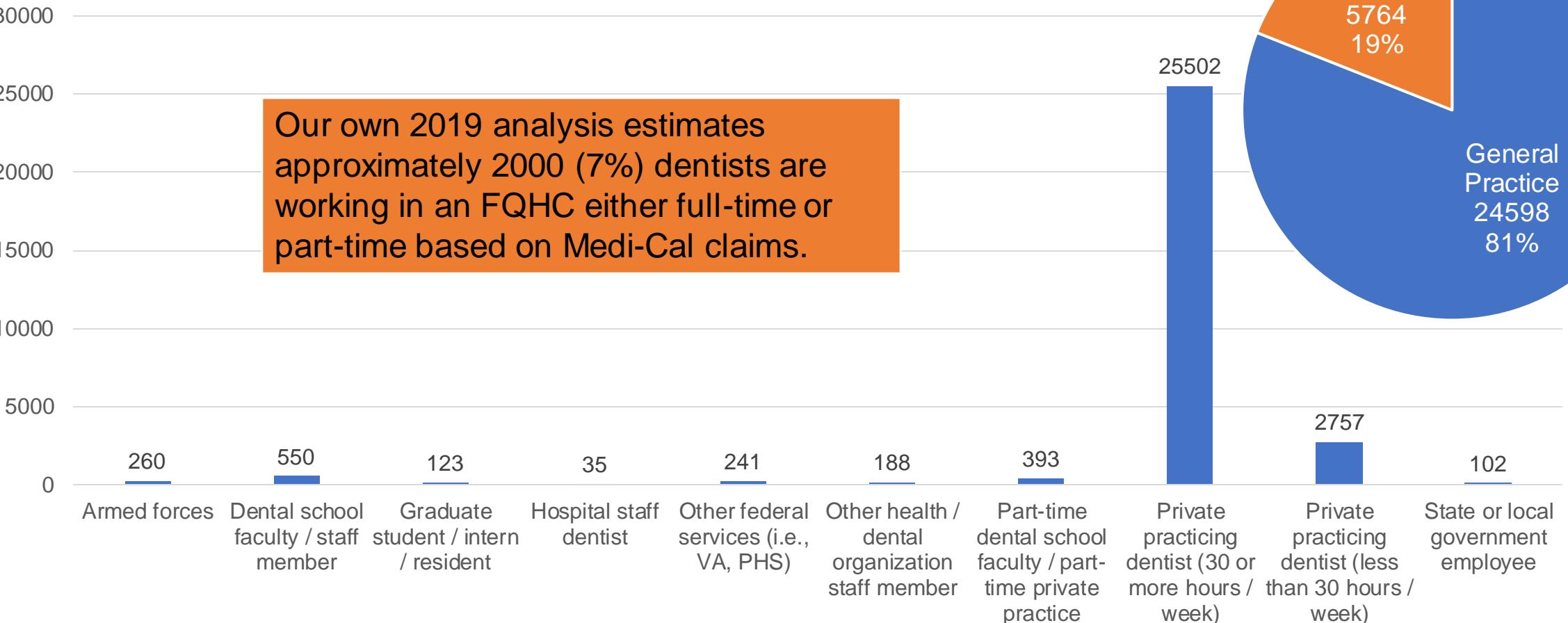
Practice location of all active dentists in the US who have graduated from a dental school in California



Active Dentists in CA (2021)

Occupational setting and specialty distribution mirror US trends

Total: 30,151 Dentists actively practicing in CA



Source: Authors analysis of 2021 ADA dentist masterfile data

*There are 12 recognized dental specialists <https://ncrdscb.ada.org/recognized-dental-specialties>

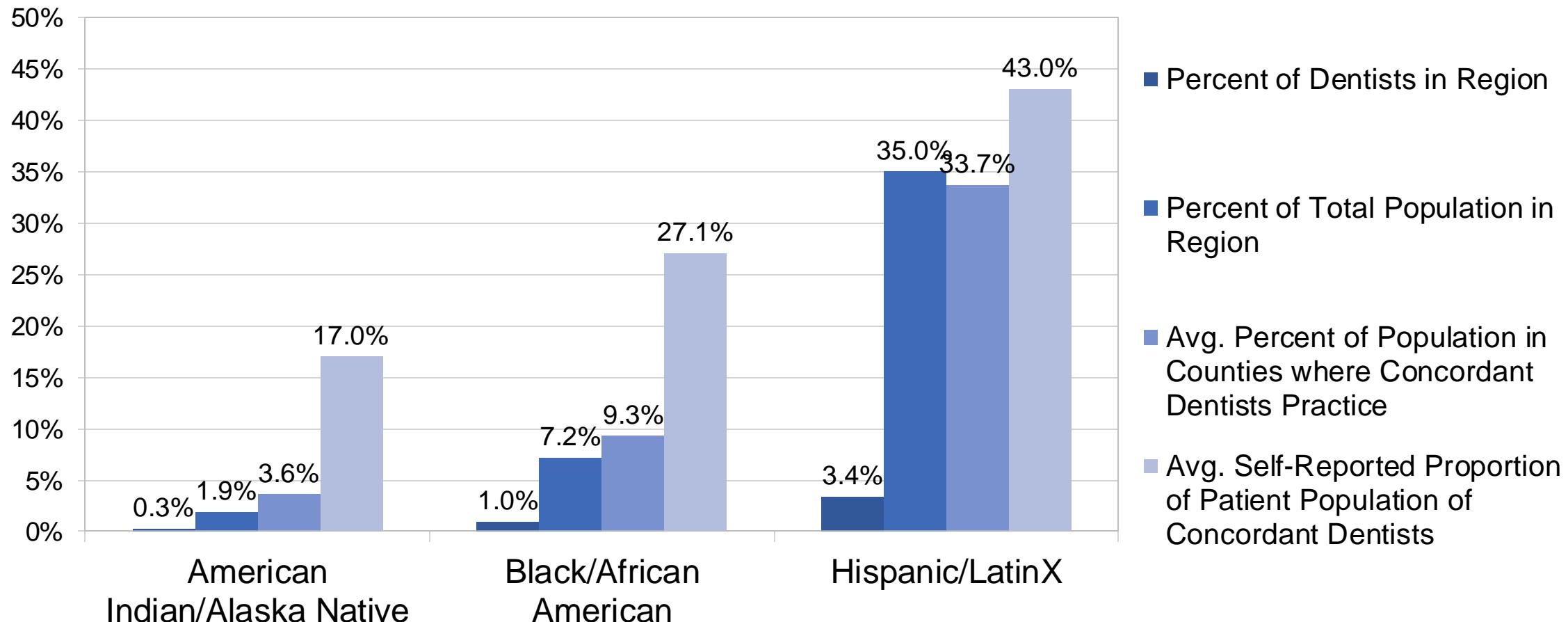
Strong Patient/Provider Concordance By Race/Ethnicity

Percent of Patients Treated by Minoritized Dentists, 2012

Patient Population (Self reported, 2012)	Minoritized Dentist Group						
	US Black	US AI/AN	US H/L	US Total	CA Black	CA H/L	CA Total
Black	44.9	12.8	13.0	29.2	31.5	9.1	14.0
AI/AN	3.7	20.4	3.9	4.7	2.9	3.1	3.1
H/L	19.8	13.7	41.8	30.1	37.3	46.0	44.2
Average	58.8	37.6	50.5	54.1	64.2	56.7	55.1

Minoritized Dentists Treat A Concentration Of Concordant Patients (2012)

Pacific Census Region, Including California



Counties With Minoritized Dentists Differ Than Those Without (2012)

All Minoritized DDS CALIFORNIA DATA	County Mean	No URM DDS	URM DDS
URM Population	38.4%	28.6%	41.8%***
Median Income	\$55,826	\$50,486	\$58,428**
Dentists Per 10K Pop	6.2	5.4	6.6*
Income Inequality (ratio)	4.8	4.6	4.9*
Residential Segregation (%)	25.9%	22.3%	27.5%***
Not English Proficient	7.2%	4.0%	8.7%***

***Significant at p<0.001

**Significant at p<0.050

*Significant at p<0.100

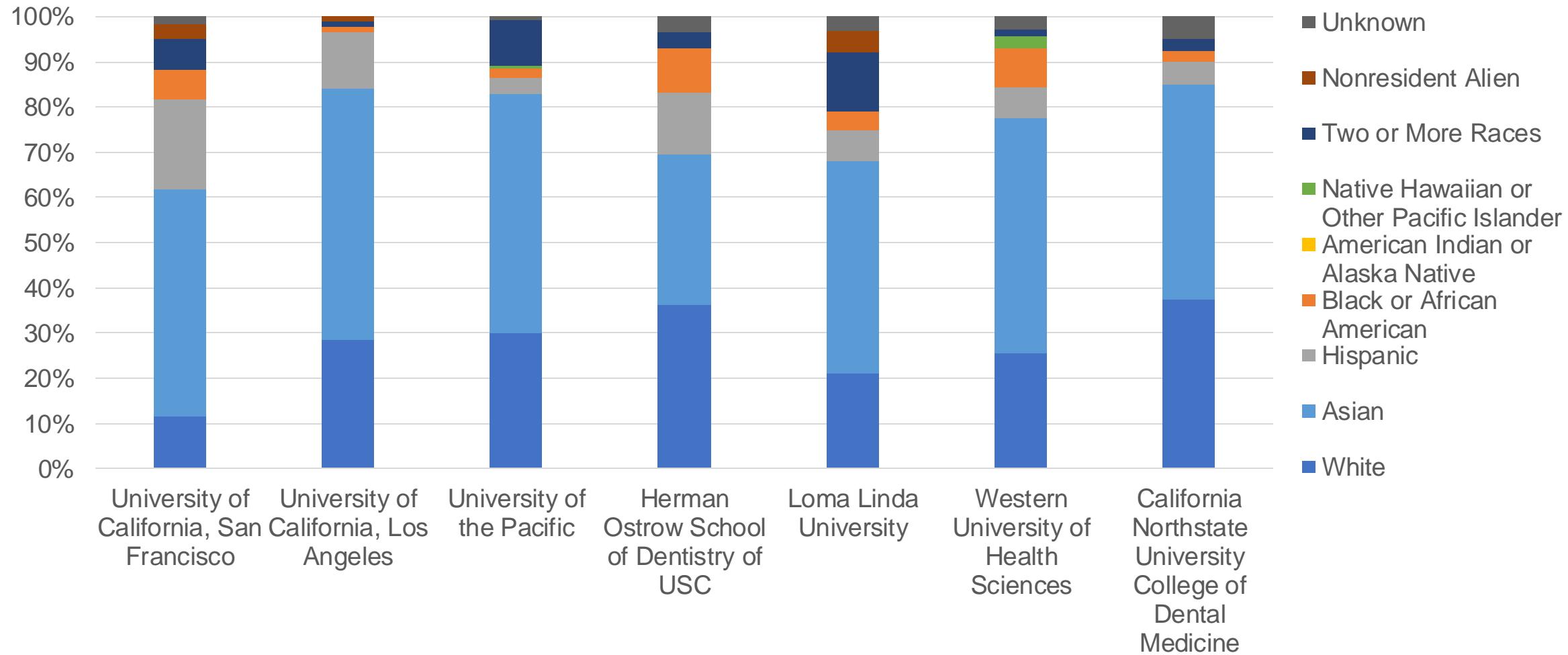
Source: <https://www.healthaffairs.org/doi/10.1377/hlthaff.2016.1122>, and authors own analysis of California data from the study

Cumulative Impact Of Structural Exclusion Of Minoritized Students From Dental Education And Practice Is Massive

- In 2012, we estimated that to bring the underrepresented minority dentist population to parity with the US population would require 19,714 Black, 31,214 Hispanic/Latino (H/L), and 2,825 American Indian/Alaska Native Dentists (AI/AN)
- For perspective, as of 2012 to produce this sum of 53,753 individuals would take **10 years** of US dental graduates

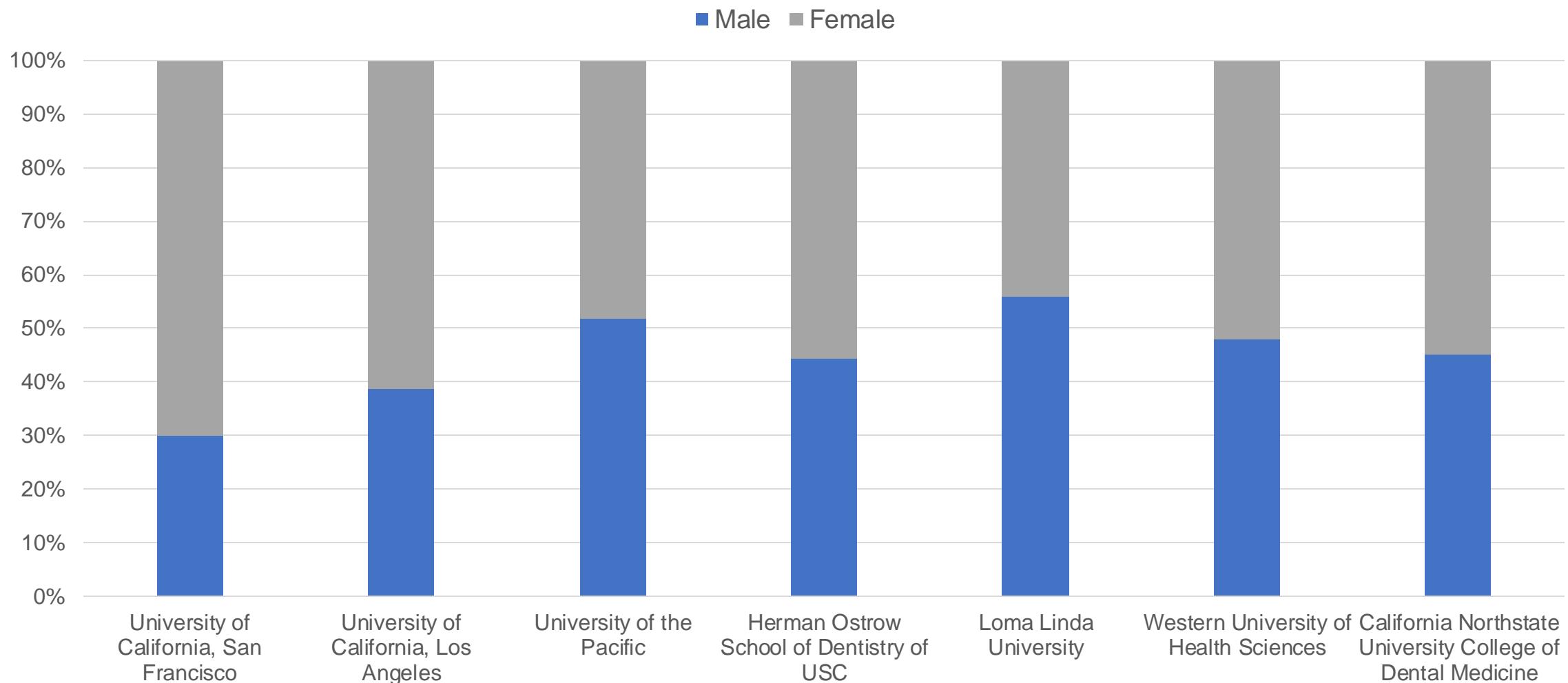
Oral Health Provider Education in California

First Year Enrollment in CA Dental Schools by Race/Ethnicity



Source: Survey of Dental Education <https://www.ada.org/en/resources/research/health-policy-institute/dental-education>

First Year Enrollment in CA Dental Schools by Gender



Source: Survey of Dental Education <https://www.ada.org/en/resources/research/health-policy-institute/dental-education>

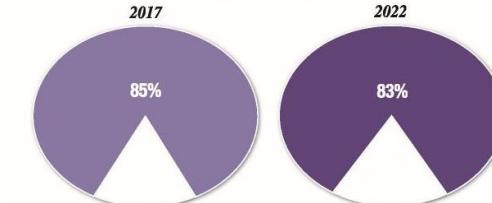
Average Education Debt and Average Dental School Debt, 2017 to 2022 for ADEA Senior Survey Respondents, in 2022 Dollars

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

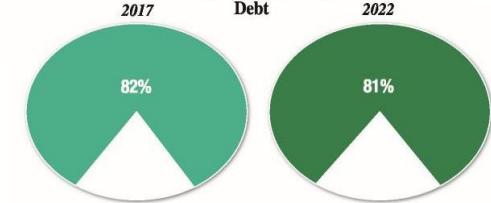
Notes: The number of respondents expecting to graduate with dental school debt was 2,376 in 2022 and 4,097 in 2017. The response rates for this survey question vary between 35% in 2020 and 75% in 2017. A response rate reflects the number of respondents for the debt question relative to the senior student 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



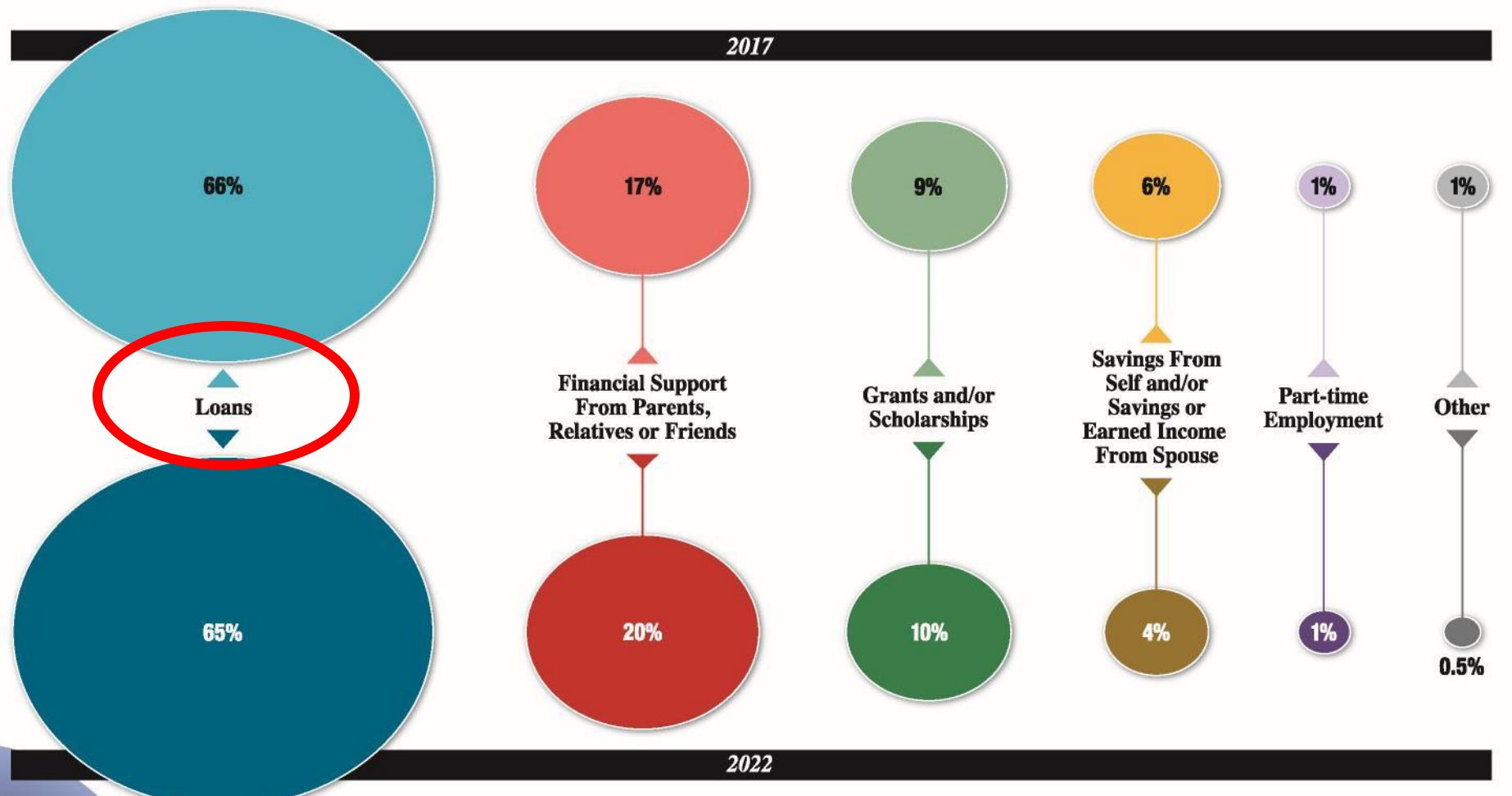
Percentage of Respondents Graduating
With Dental Education
Debt



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)

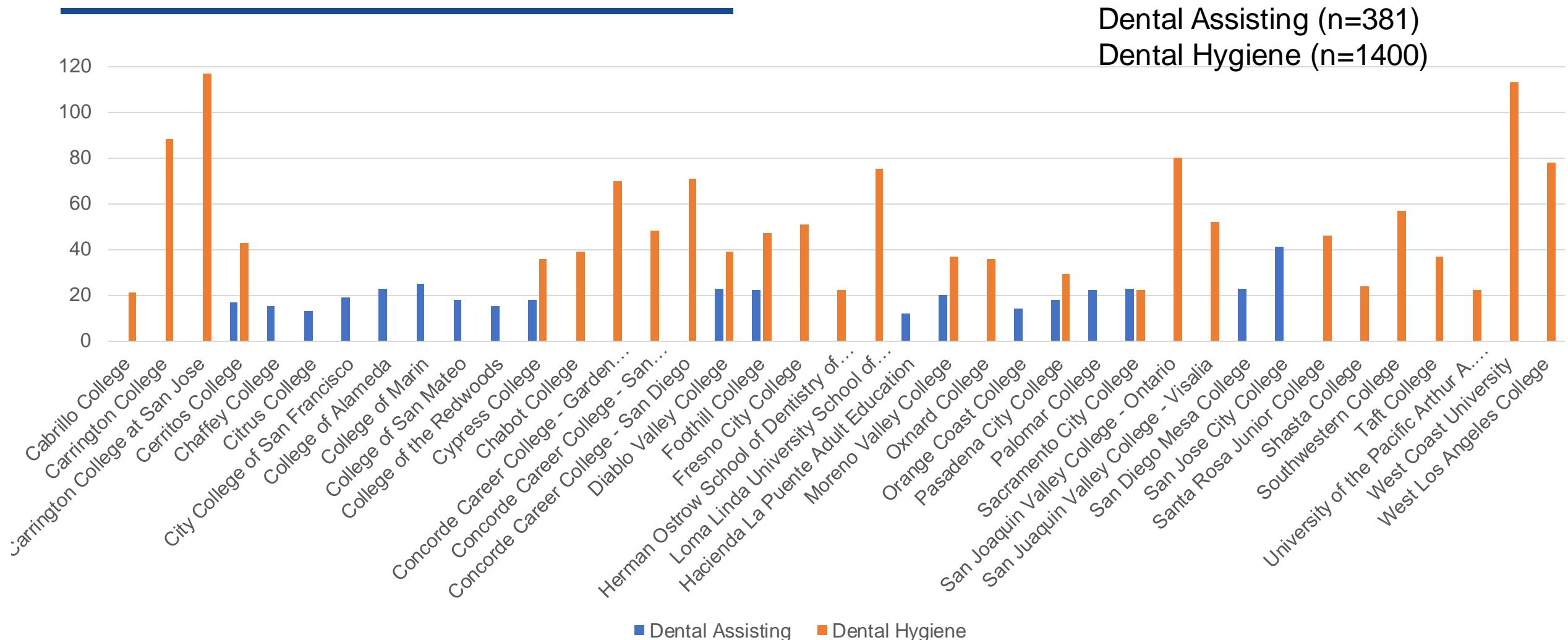
CA Dental Corps Loan Repayment (CDB)

CalCares (Prop 56)

CDA Loan Repayment Program (retired in 2022)

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

Total Enrollment in Allied Educational Programs (2021-2022)



Source: Survey of Dental Education <https://www.ada.org/en/resources/research/health-policy-institute/dental-education>

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

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

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

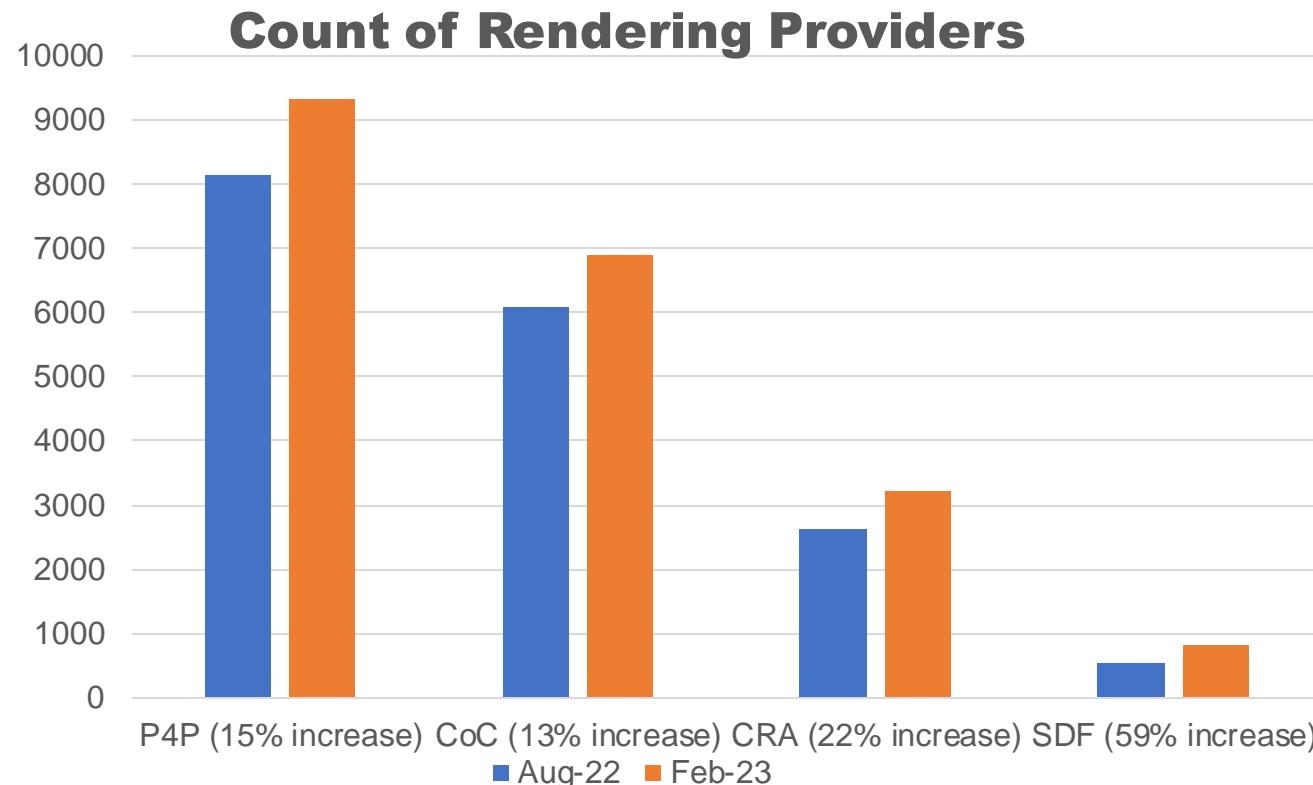
- January 2016-December 2020, waiver extension through 2021
- Four domains of innovation (age 1-20) which varied by geography and over time
 - Increase preventive services
 - Caries risk assessment
 - Continuity of care
 - Local dental pilot projects
- Interim report released with mixed results through 2018
- Final report expected 2021, not yet released

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



Access to Dental Care

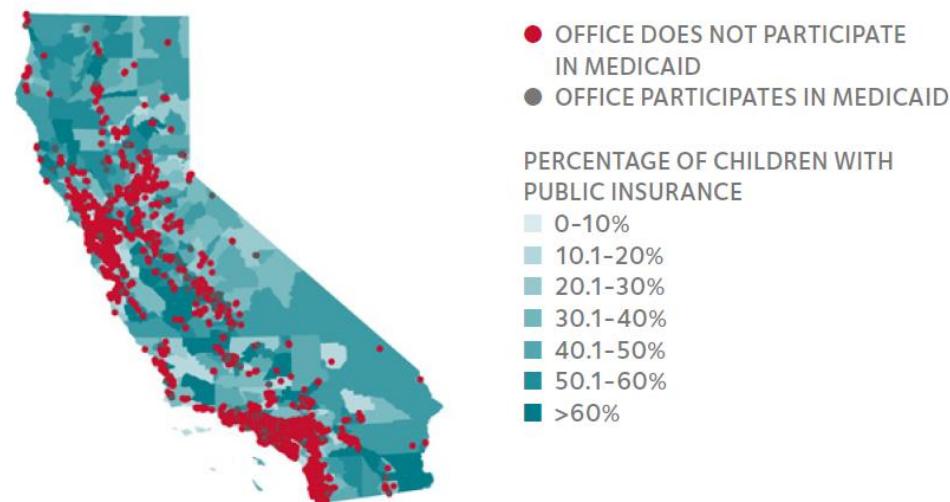
Californians were asked whether they or a family member had skipped or delayed specific types of health care in the last 12 months. **38% report skipping dental care**, 27% report delayed physical health care, 23% skipped recommended medical tests or treatment, 21% delayed mental health care, 20% did not fill a prescription, and 16% reported cutting pills in half or skipping doses.

Access for Children Enrolled in Medi-Cal

PUBLICLY INSURED CHILDREN PER MEDICAID DENTIST WITHIN A 15-MINUTE TRAVEL TIME



DENTAL OFFICE LOCATIONS AND PERCENTAGE OF CHILDREN WITH PUBLIC INSURANCE



73% of publicly insured children live in areas where there is at least one Medicaid dentist per 2,000 publicly insured children within a 15-minute travel time.



94% of the population live in areas where there is at least one dentist per 5,000 population within a 15-minute travel time.

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

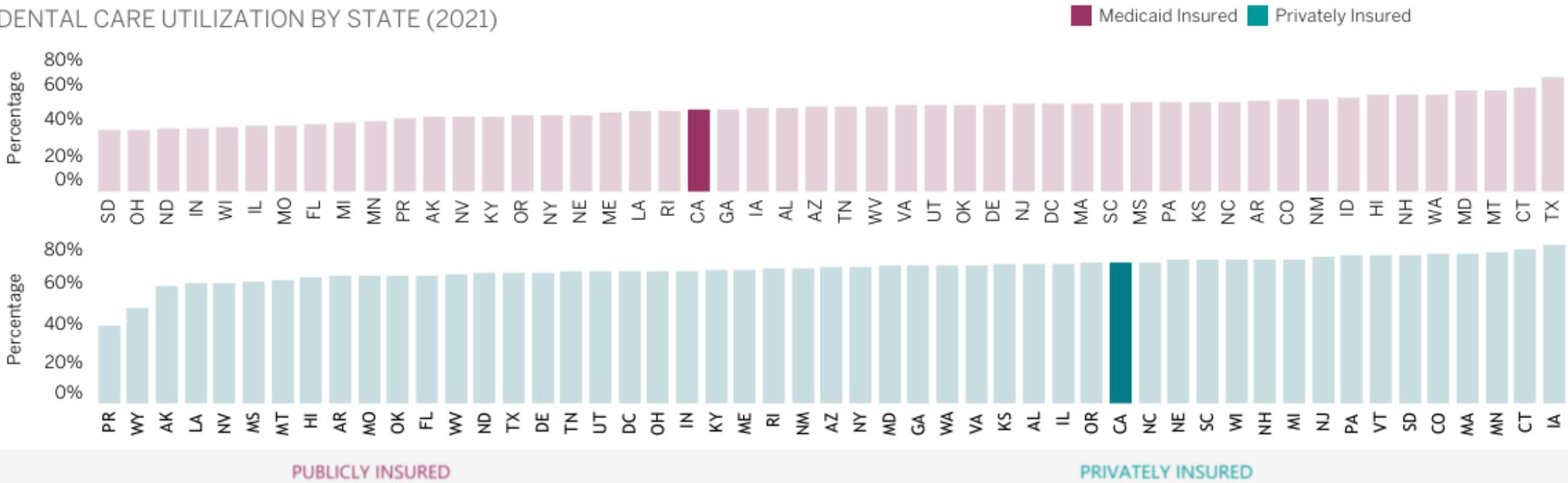
66%

United States

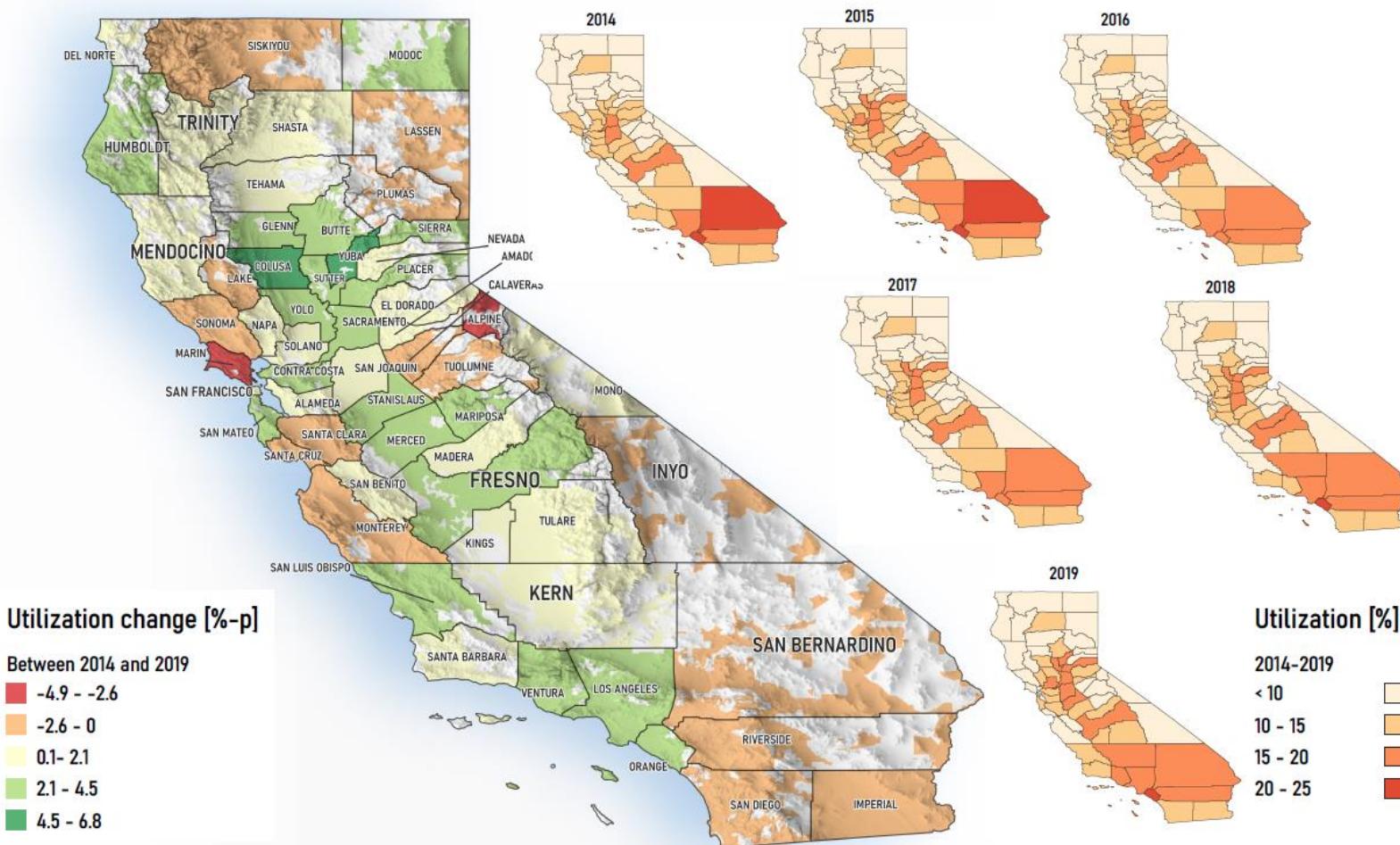
69%

California

DENTAL CARE UTILIZATION BY STATE (2021)



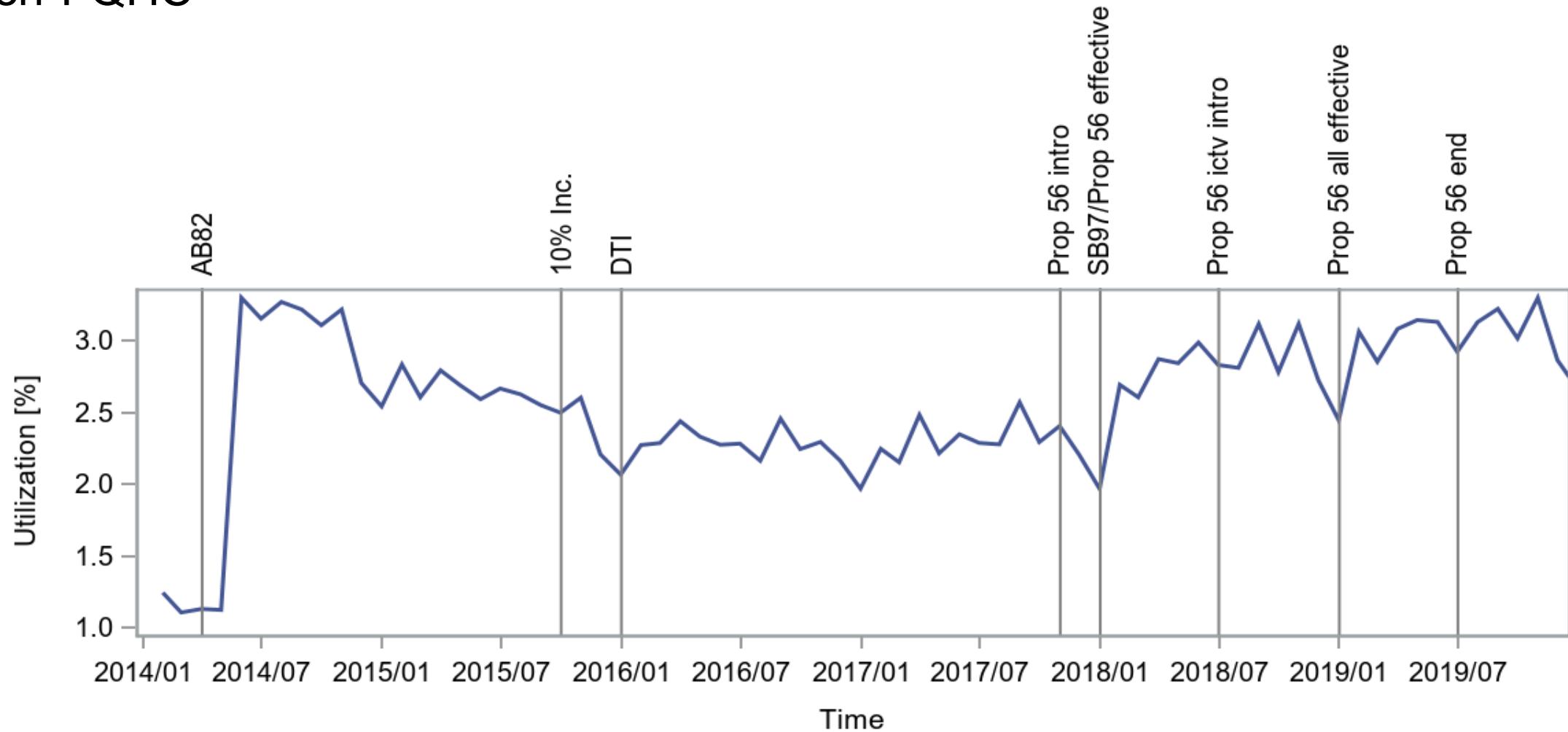
Adult Utilization was Mixed in Non-FHQC Settings Prior to COVID Across the State



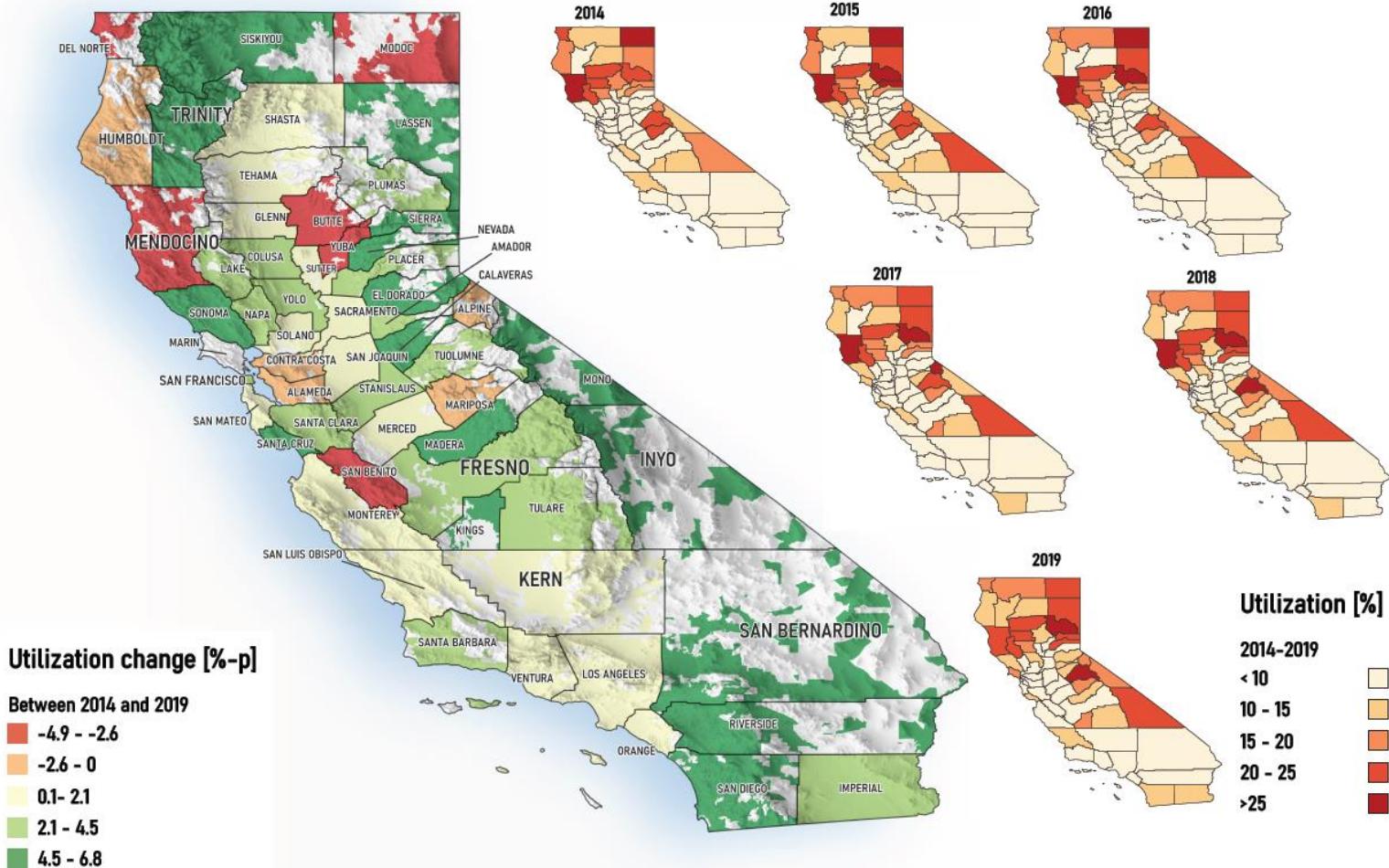
Source: Authors analysis of dental workforce and adult Medi-cal dental claims data from 2014-2019
(Funded by WestHealth Policy Center, DUA 19-08-01, CPHS - 2019-173)

Monthly adult utilization by setting of care

Non-FQHC



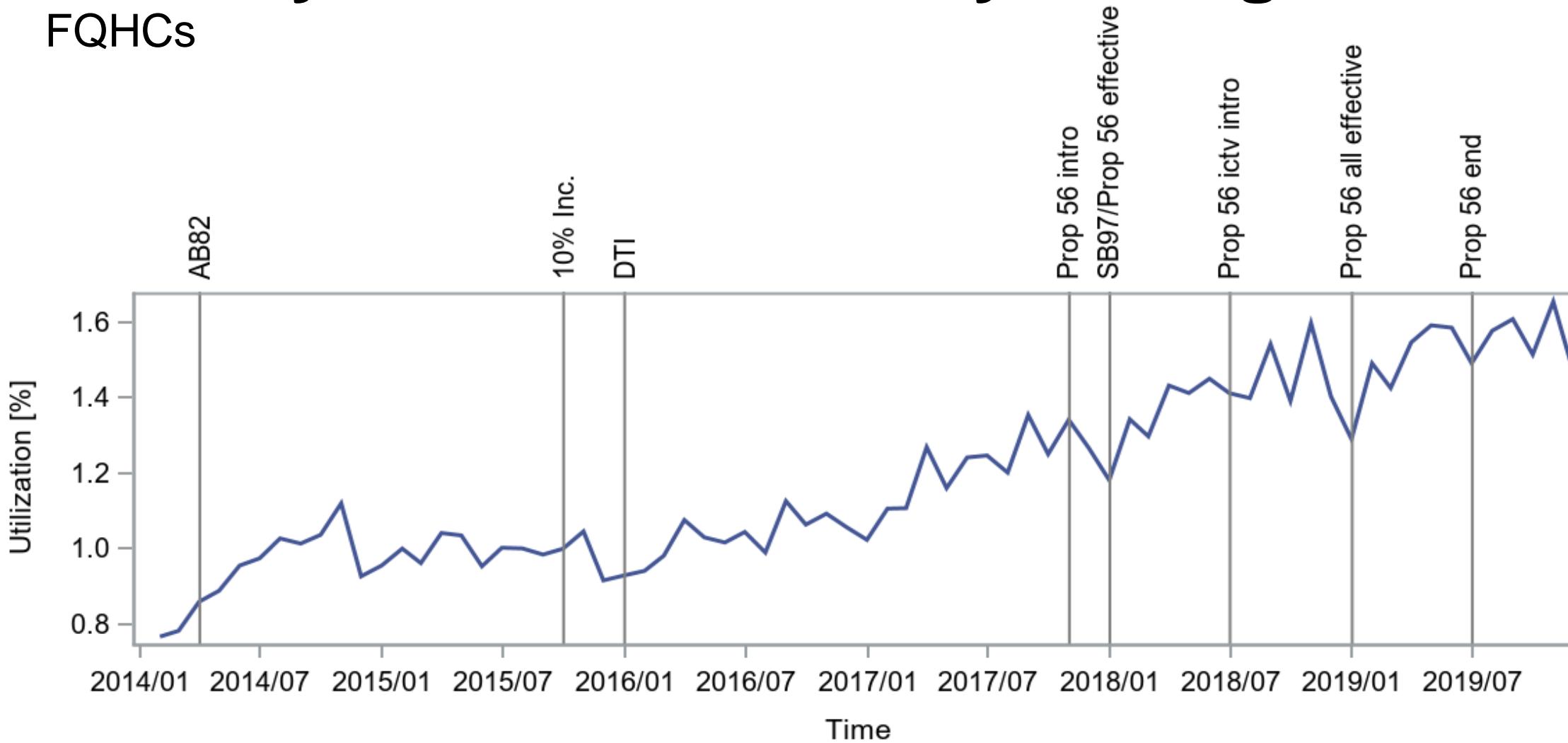
Adult Utilization in FQHCs Increased Until COVID in Most Counties



Source: Authors analysis of dental workforce and adult Medi-cal dental claims data from 2014-2019
(Funded by WestHealth Policy Center, DUA 19-08-01, CPHS - 2019-173)

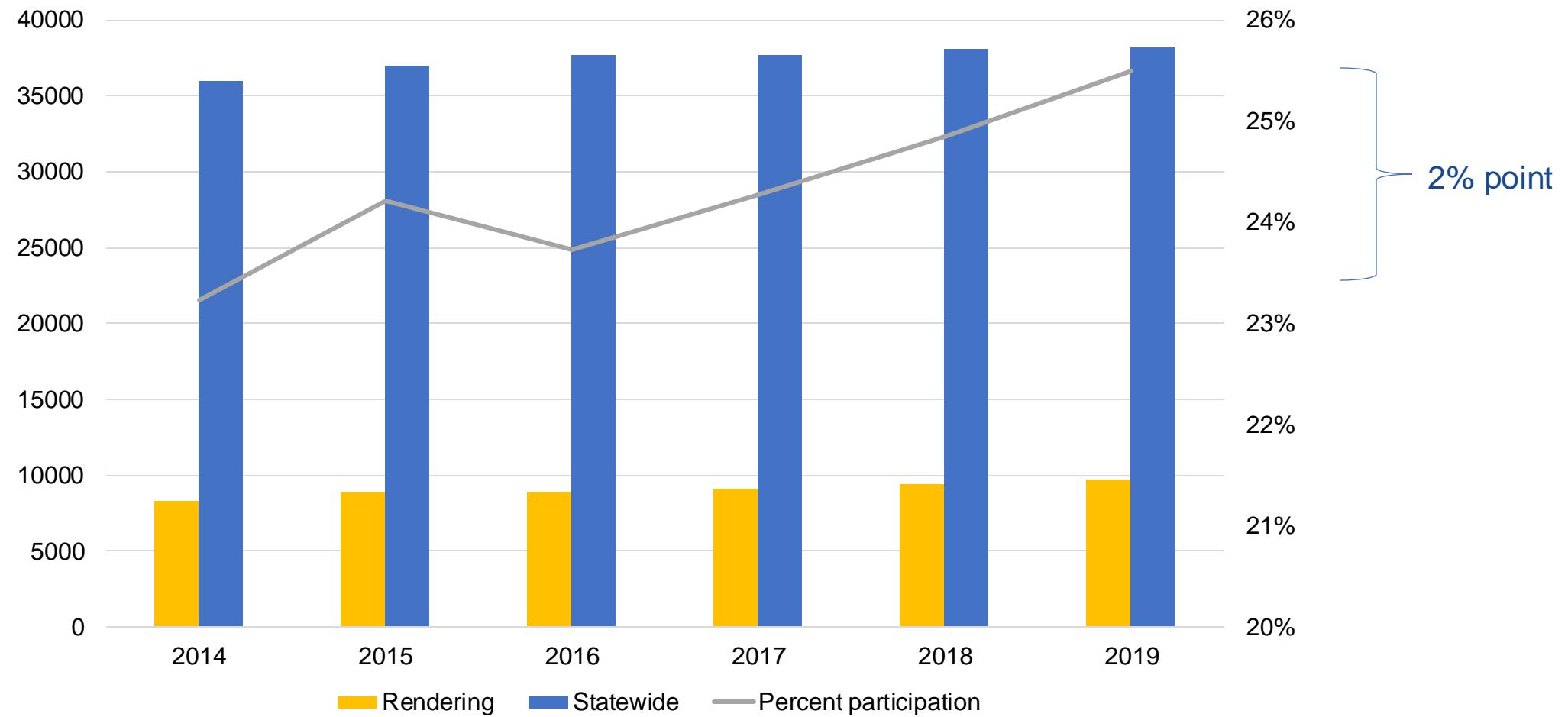
Monthly adult utilization by setting of care

FQHCs



Providers

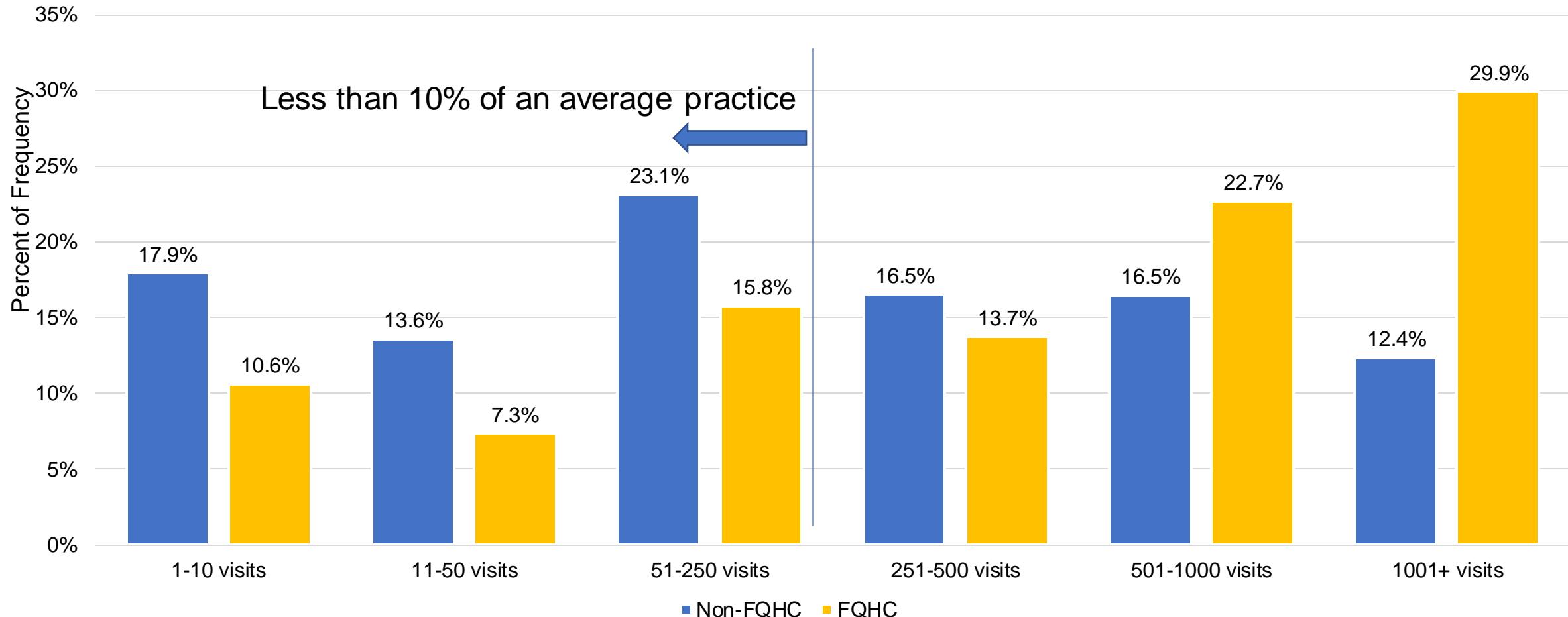
Rendering* vs. all active licensees in California**



Source: Authors analysis of dental workforce and adult Medi-cal dental claims data from 2014-2019
(Funded by WestHealth Policy Center, DUA 19-08-01, CPHS - 2019-173)

Extent of Provider Participation

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



Source: Authors analysis of dental workforce and adult Medi-cal dental claims data from 2014-2019
(Funded by WestHealth Policy Center, DUA 19-08-01, CPHS - 2019-173)

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

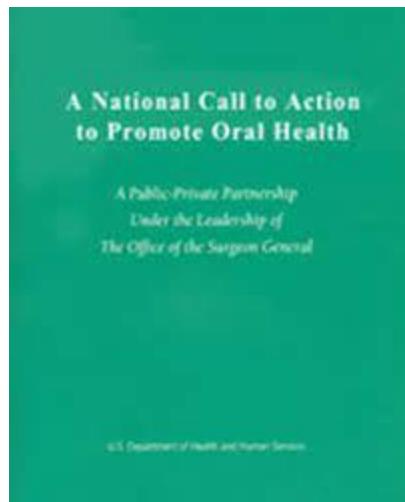
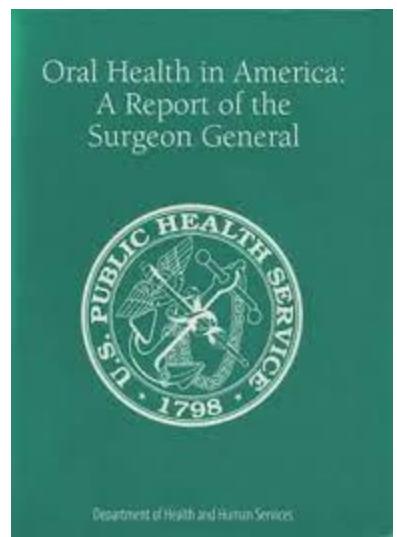
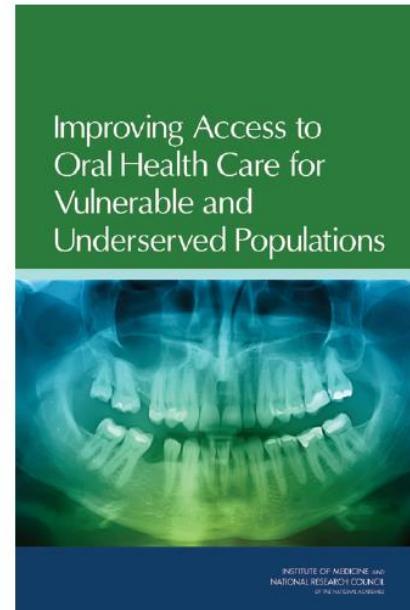
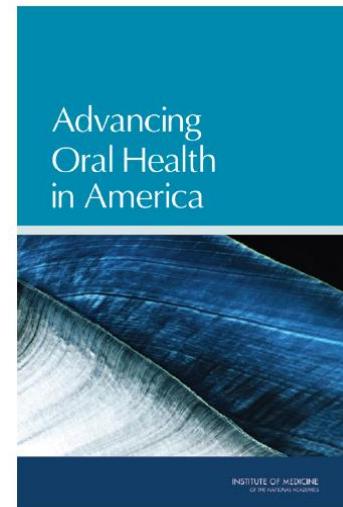
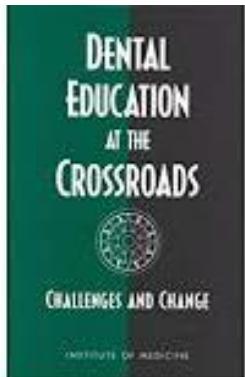
Expanding Oral Health Workforce Flexibility

- 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



Lifelines of Wellness



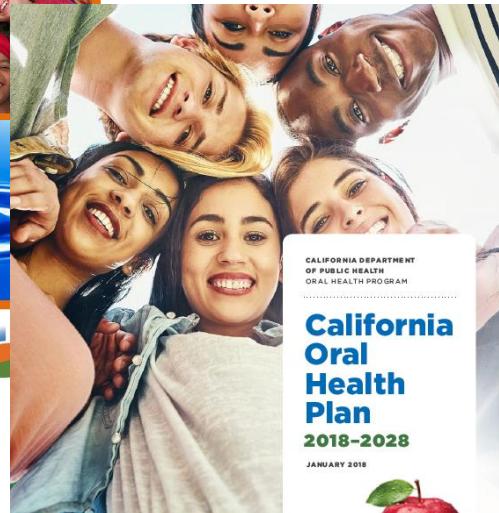
UCLA CENTER FOR
HEALTH POLICY RESEARCH



Center
for Oral
Health



CELEBRATING
30 YEARS
Healthforce
Center at UCSF



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

access 
Understanding the issue. Answering the need.

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

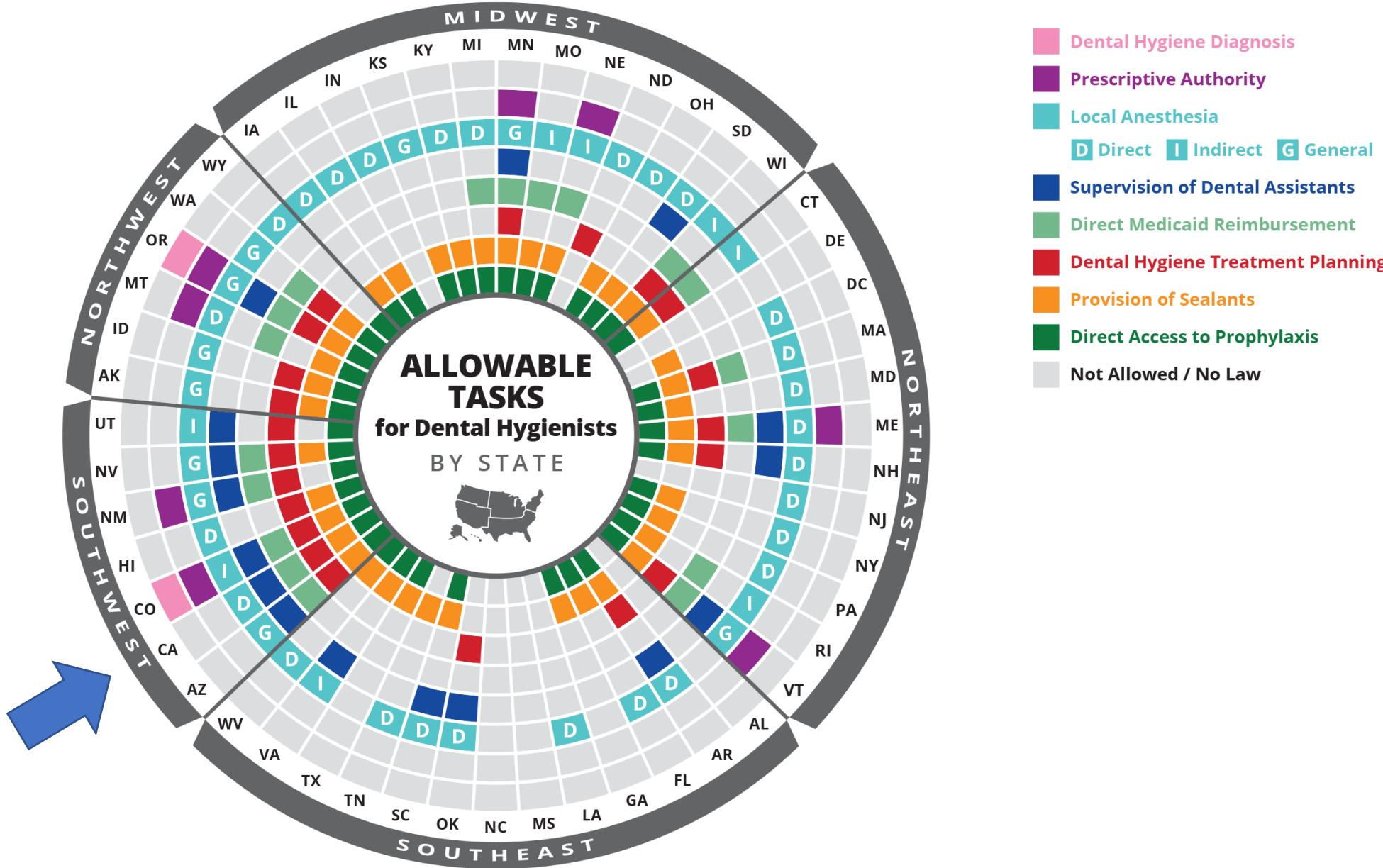
Key Take Aways

- 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.

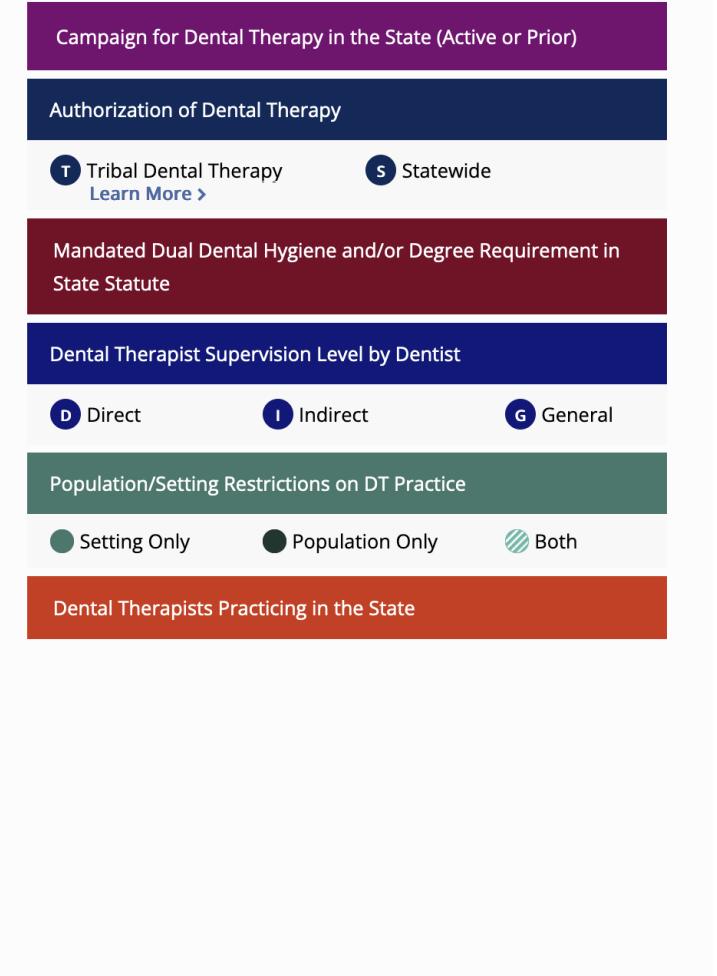
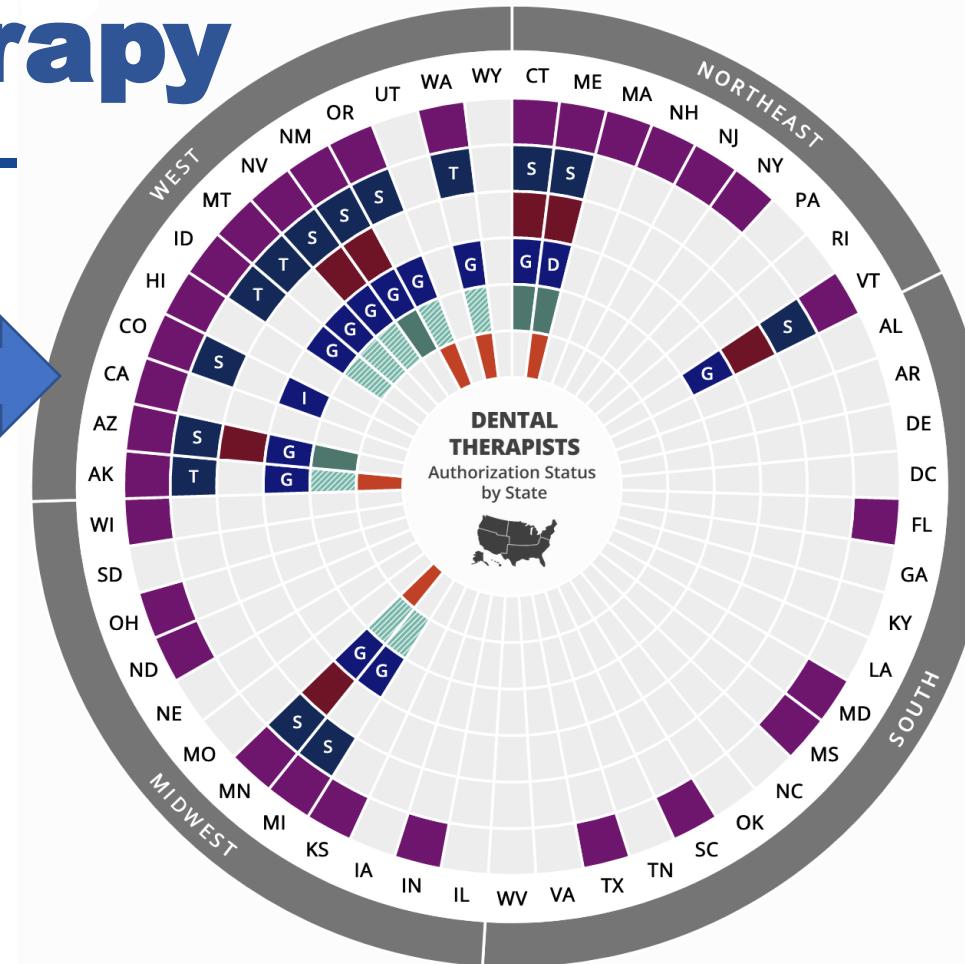
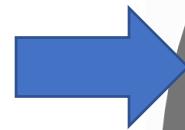
Acknowledgements and Data Sources

- [UCSF team](#)
 - Emily Shen and Matthew Jura, PhD, Shuang Liang, MA, Aubri Kottek, 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](#)

Additional Resources



Dental Therapy

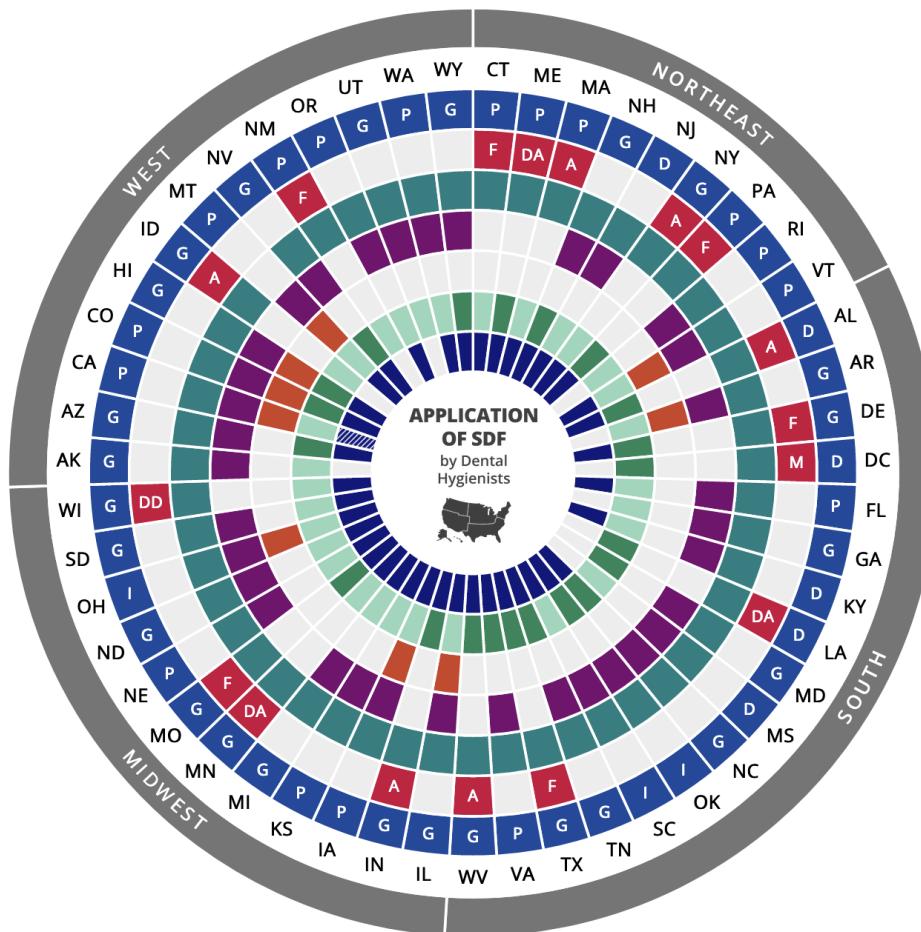


ADA American Dental Association®

Community Dental Health Coordinator

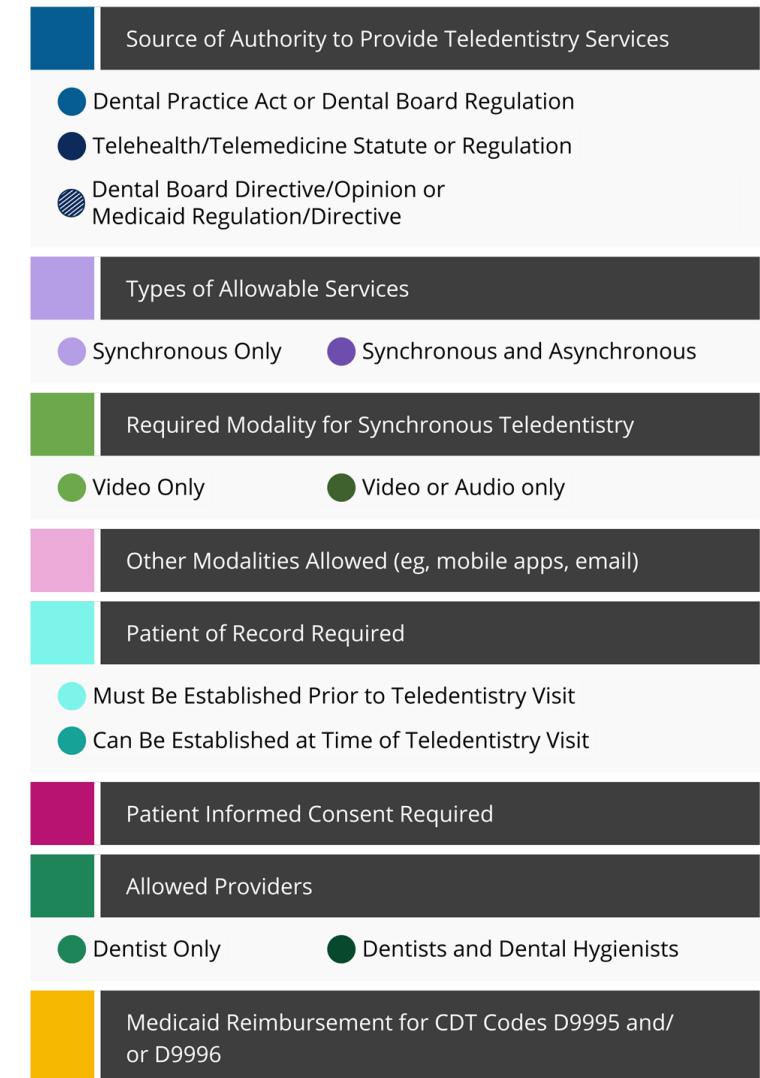
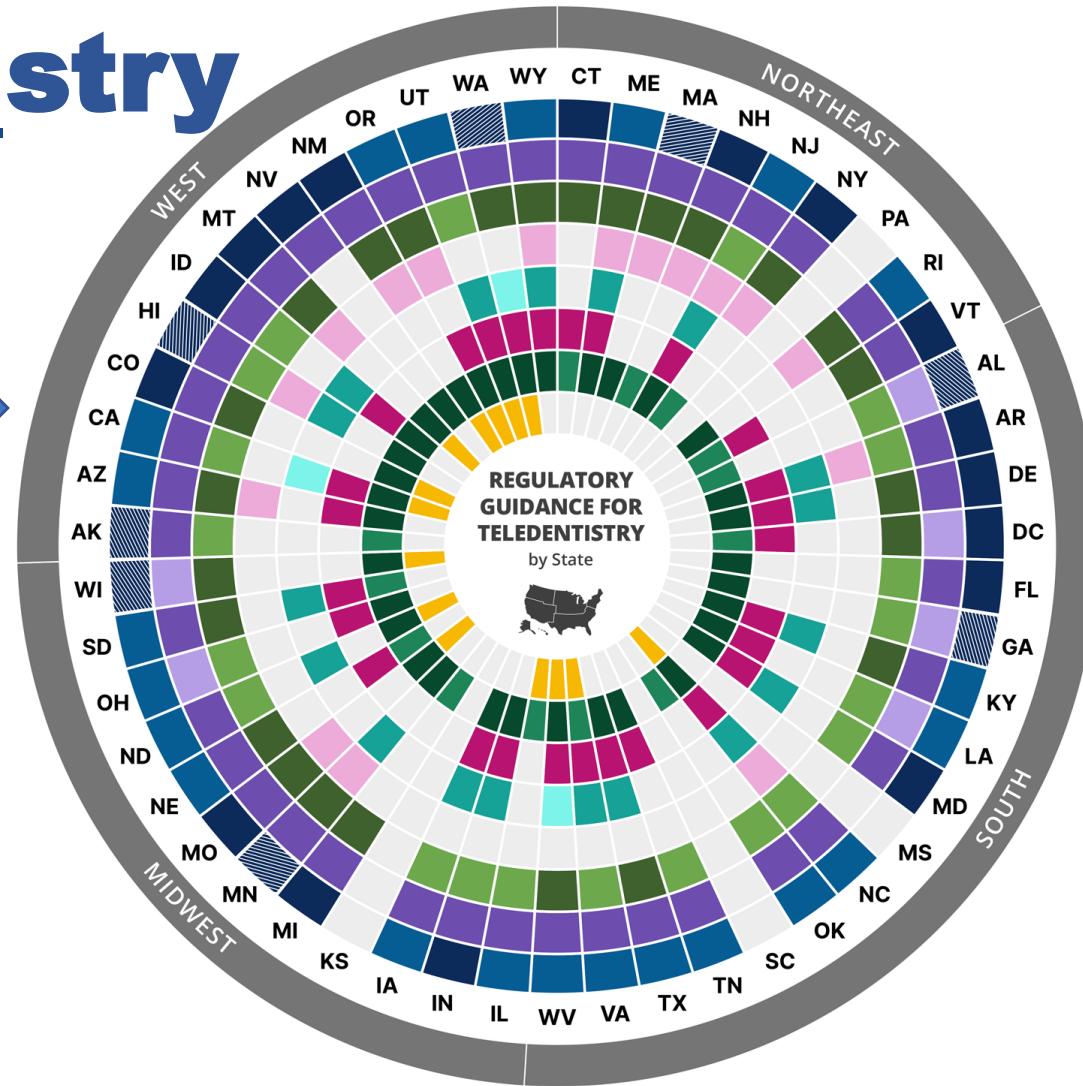
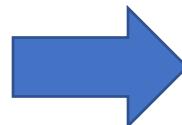
Silver Diamine Fluoride (SDF)

CalAIM initiative adds Silver Diamine Fluoride (SDF) as a new dental benefit in alignment with national dental care standards.



Lowest Level of Supervision Under Which a DH can Apply SDF
D Direct
I Indirect
G General
P Public Health/Collaborative
Scope of Practice for DHs May Allow SDF Under Permission for Application of:
A Antimicrobial/Anticariogenic Agents
F Topical Fluoride/Preventative Agents
M Medicament
DA Desensitizing Agent
DD Delegable Duty
State Medicaid Has Frequency Limitations on Payment for Fluoride or SDF
SDF Clearly Within Scope of Practice (Statute, Regulation, or Board Opinion)
Dental Board Recommendations or Requirements for Specific Education for a DH to Apply SDF Under All or Specific Conditions
Age Limitation in Medicaid Guidance for Payment of Fluoride or SDF Applications
● Children Only
● Children & Some or All Adults
State Medicaid Program Covers CDT 1354 (Interim Caries arresting Medicament Application)
● Yes
○ No
● Pilot Program Only

Tele-dentistry

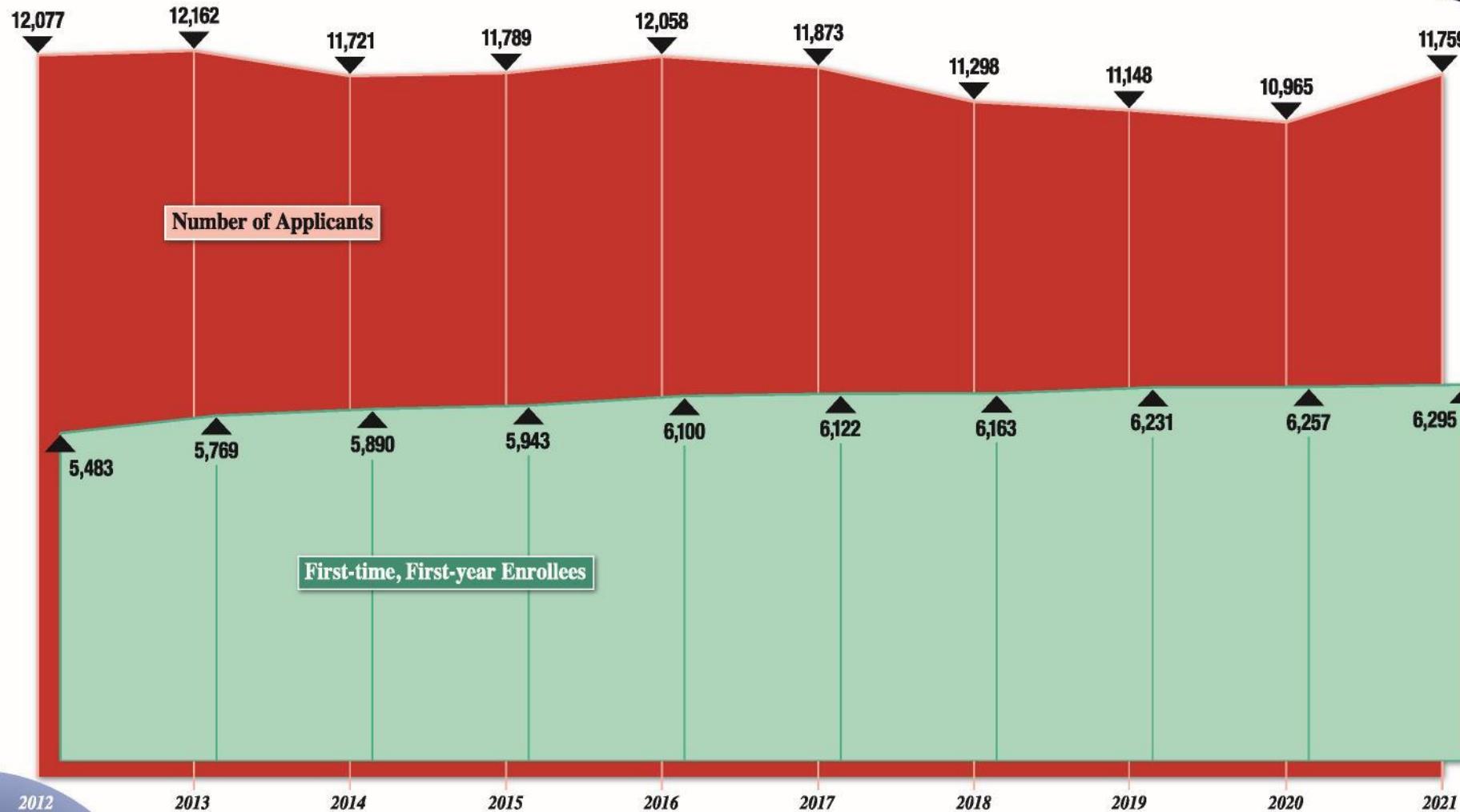


Source: <https://oralhealthworkforce.org/regulatory-guidance-for-teledentistry-by-state/>

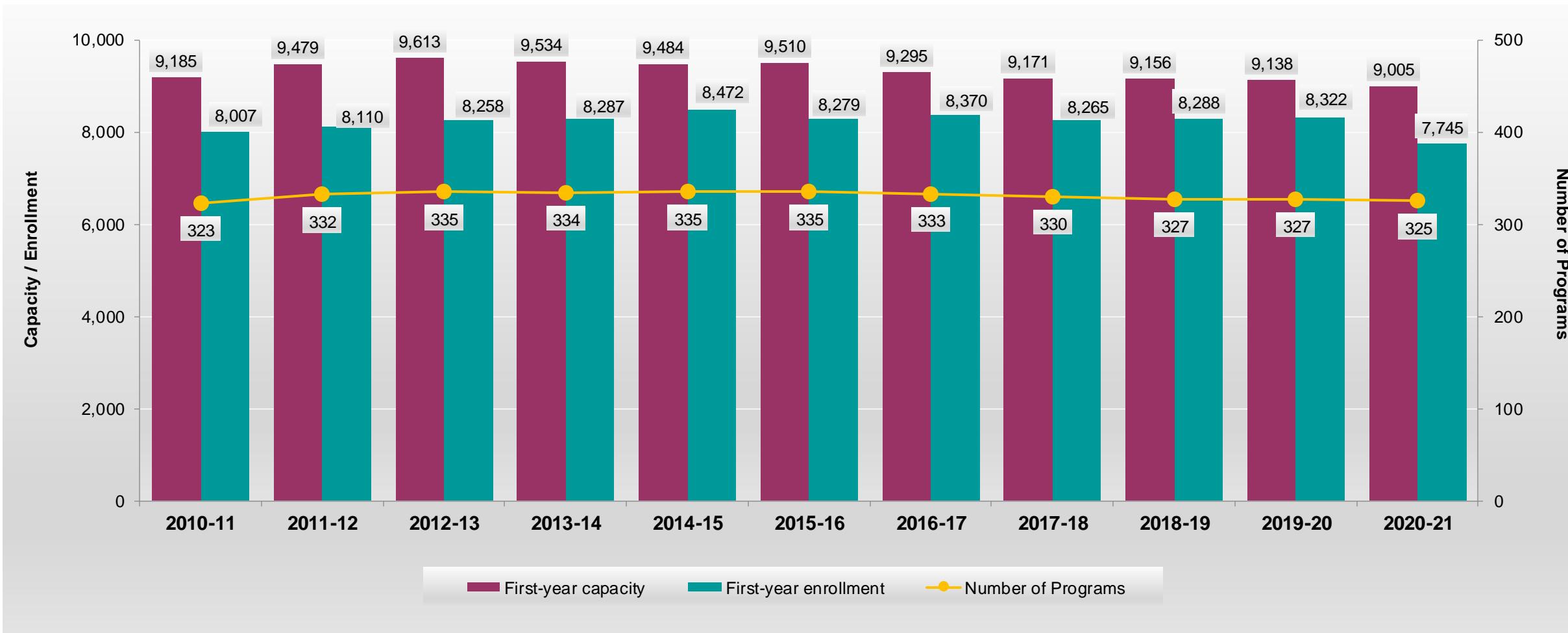
Applicants and Enrollees in U.S. Dental Schools



First-time, first-year enrollment increased steadily between 2012 and 2021, mainly due to several new dental schools opening and some existing schools increasing class sizes. Meanwhile, the number of applicants registered a volatile trend over the same period. The number of applicants in 2021 was larger than in the previous year, but still below the 2012-2017 highs.

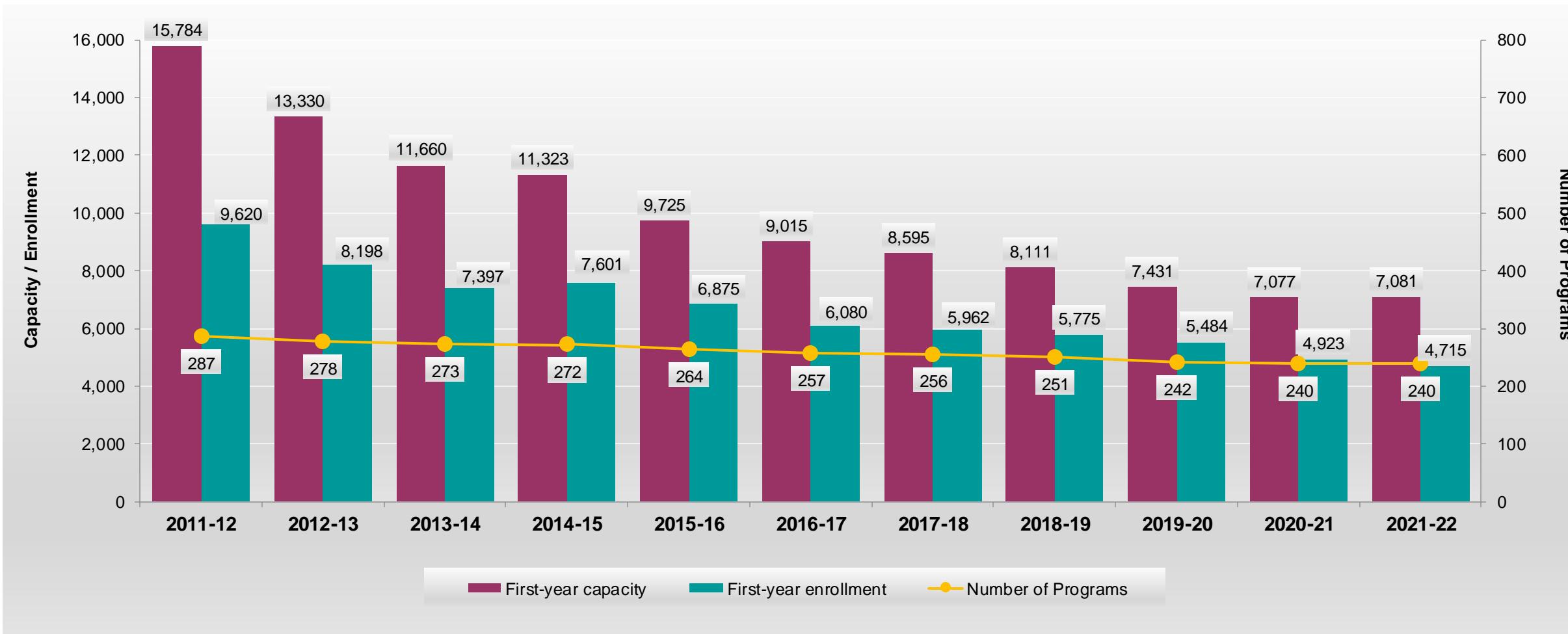


First-Year Student Capacity Versus Enrollment by Number of Dental Hygiene Programs in the US, 2010-11 to 2020-21



Source: American Dental Association, Health Policy Institute, Surveys of Dental Hygiene Education Programs. 2021.

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



Source: American Dental Association, Health Policy Institute, Surveys of Dental Hygiene Education Programs. 2021.

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%

Source: Authors analysis of dental workforce and adult Medi-cal dental claims data from 2014-2019
(Funded by WestHealth Policy Center, DUA 19-08-01, CPHS - 2019-173)