

# The Impact of Changing Workforce Models on Access to Oral Health Care Services

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# The Oral Health Workforce Research Center at CHWS

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- The [Center for Health Workforce Studies \(CHWS\)](#) has more than 20 years' experience studying all aspects of the health workforce:
  - Established in 1996, based at the University at Albany School of Public Health
  - Committed to collecting and analyzing data to understand workforce dynamics and trends
  - Goal to inform public policies, the health and education sectors, and the public
  - Broad array of funders in support of health workforce research
- [Oral Health Workforce Research Center \(OHWRC\)](#) based at CHWS is funded under a cooperative agreement with the US Health Resources and Services Administration (HRSA)
  - Partnership with the [Healthforce Center](#) at University of California San Francisco

# The OHWRC is Engaged with Diverse Research Topics

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## The Pipeline

- Racial/ethnic diversity of the dental workforce (primary survey data/ completed)
- Evolving pipeline of Hispanic dentists (primary survey data/completed)
- Gender diversity of the dental workforce (secondary data/in process)
- Dental faculty (secondary data/completed)
- Residency programs and impacts on choice of practice setting (primary survey data/ in process)
- FQHC engagement with dental student externships and dental residency programs (primary survey data/ completed)
- Integration of curriculum about substance use disorders and mental/behavioral health in dental schools (underway)

## Workforce and System Innovation

- The dental assisting workforce (secondary data/completed)
- Dental hygiene scope of practice (secondary data/3 studies completed)
- Determinants of oral health screening and assessment in PA clinical practice (primary survey data/completed)
- Mobile and portable dentistry (case studies/completed)
- Opioid prescribing by dentists in Oregon and New York (underway)
- Teledentistry (case studies/completed)

# Topics (cont.)

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## Workforce and System Innovation

- Integration of primary care and oral health in FQHCS (case studies/completed)
- Trends in the provision of oral health services in FQHCs (secondary survey data/completed)
- Trends in the development of Dental Service Organizations (primary survey data and case studies/completed)
- Integration of behavioral and oral health services in primary care clinics (case studies/in process)
- Evolving models for dental services in long term care settings (case studies/completed)

## Patients

- Consumer survey (primary survey data/in process)
- Variation in utilization of oral health services by patients insured by Medicaid in two states (primary claims data/completed)
- Consumer survey of parents about service access for children (underway)

# The OHWRC and CHWS Have Partnered with Numerous Stakeholders to Better Understand Barriers and Facilitators to Oral Health Service Access

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- Both prior and subsequent to the cooperative agreement with HRSA, CHWS has partnered with and/or been sponsored by many organizations to conduct research on various oral health topics of national, state or local interest
  - The Institute of Medicine (now National Academies of Sciences, Engineering, Medicine)
  - The Pew Charitable Trusts
  - DentaQuest Foundation
  - National Commission on Certification of Physician Assistants
  - Maine Health Access Foundation
  - Medical Care Development
  - American Academy of Pediatric Dentistry
  - IHS Markit
  - Otto Bremer Foundation
  - Maine Oral Health Funders
- Under the cooperative agreement, the OHWRC has worked with still other groups to achieve project goals including
  - Association of American Medical Colleges
  - American Dental Association
  - American Dental Hygienists' Association
  - Dental Assisting National Board
  - American Dental Education Association
  - American Academy of Physician Assistants
  - National Interprofessional Initiative on Oral Health
  - Several State Medicaid Programs
  - Substance Abuse and Mental Health Services Administration
  - Health Resources and Services Administration

# Dissemination

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- Technical reports and briefs to the funders
- Publicly available on a dedicated website ([www.oralhealthworkforce.org](http://www.oralhealthworkforce.org) )
- Peer reviewed journal articles
  - *Health Affairs*, December 2016 – chosen by editor as one of ten best in the year
- Many podium, webinar, and poster presentations
  - Academy Health Research Meeting
  - National Oral Health Conference
  - Oral Health 2020 Network
  - George Washington University Webinar Series
  - Minnesota State Oral Health Coalition
  - Kentucky State Legislature

# Today's Presentation

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- Overview of our observations on the oral health service delivery system
  - Impacts of health system redesign on oral health service delivery
  - Overview of systemic changes generating new workforce models and team based service delivery models
  - Supply and distribution of the dental workforce
  - Impact of scope of practice regulation
  - Specific examples of organic growth and local innovation in programs addressing specific community needs
  - The oral health care safety net

# Why is Change in Oral Health Service Delivery Necessary From a Public Health Perspective

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- **Significant oral health disparities**

- By race and ethnicity - 5 year survival rate from oral cancer for black men is 36% compared to 61% for white men (CDC, 2018)
- By socioeconomic status - pronounced disparities in caries experience for low income children and adolescents (Slade et al, 2018)
- By educational status – 35-44 year old adults with less than a high school education have three times the rate of periodontal disease as those in same age cohort with some college education (CDC, 2018)
- By gender – periodontal disease is greater in men than in women (CDC, 2018)
- By age – Most older Americans (>65 years) lack dental insurance
- By geographic location – Dental HPSAs, many rural residents travel distances to get services



# Drivers of Change in Workforce Policy in Recent Years Are Numerous

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- **Workforce shortages:** Dental Health Professions Shortage Areas (800 in 1993; 5,866 in 2017 (10,802 practitioners) (Kaiser, 2017)
- **Uneven distribution** of dentists particularly in smaller population areas
- Changing **public policy** – ACA, Medicaid
- Population **demographics**
- Racial/ ethnic oral health **disparities**
- Increasing emphasis on upstream effects of **social determinants of health and the importance of equal access and equity**
- Limited resources to pay for care
- **Technology and Materials**
- **Consumer demand** for alternative providers
  - Market forces
  - Desire for convenient care – Dental Service/Support Organizations

# There is Growing Evidence of Ongoing Systemic Change in Oral Health

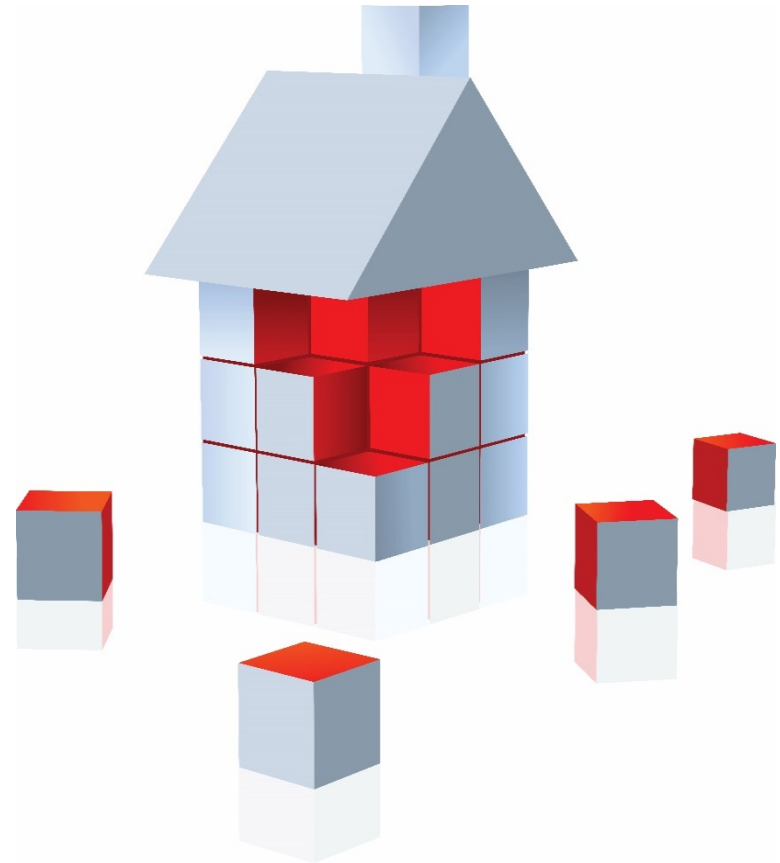
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- Emphasis on improving oral health vs dental health
- Focus on prevention and early intervention
- Greater emphasis on risk assessment – using resources appropriately
- Emergence of team based models of care delivery
- Integration of oral health services into primary care settings
- Drive to encourage use of diagnostic codes
- Growth in use of electronic dental records – inclusion in the EHR
- Consolidation into large group practices – Dental Service Organizations (DSOs) - Heartland, 850 practices
- Growth in the dental safety net
- Initiatives to move oral health services to community settings
- Use of technology to improve access

# The Impact of Systemic Change on the Oral Health Service Delivery System

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- Oral health service delivery is no longer exclusive to private dental practice.
- Providers are more distributed and diverse in location and constitution
- Care delivery is patient centered. Efforts to bring services to the patient rather than bringing the patient to the provider
  - Providing services in various settings is more challenging in dentistry than medicine because of the procedure oriented nature of practice
- Innovation depends on an oral health workforce working at high levels of professional competence



# Key Themes Emerging From Our Research: What makes a positive impact on oral health access and the oral health of the population?

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- Integration of oral health with primary and behavioral health service delivery
- Workforce innovations
  - Expanded functions for existing workforce
  - New categories of oral health workers
  - Primary care workforce
- Multiple points of entry to the oral health system
- **Importance of engaging private practice dentists** in care for the underserved
- Team based approaches to oral health service delivery
- Local solutions and program design to mediate specific oral health access issues
- Improving insurance status of the population

# Workforce Research and Policy

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- Historically, mainly about supply
  - Concerns about having enough dentists to serve the public
- Researchers spent time enumerating and locating
- Increasing interest in demand side of equation – impact of health literacy, insurance status, etc. on utilization
- Interest emerged in linking workforce and their interventions to health outcomes
- Changed the trajectory of the research agenda
- Broadened the subject to include the context and the consumer
- Corollary to seeking clinical evidence of systemic linkages to oral disease
- Remains difficult to link an outcome to a specific intervention and a specific workforce

# Workforce is Often Ignored in Discussions About Effecting Change Yet it is an Essential Element in Actualizing Systemic Goals

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- Healthcare workforce is the **ACTIVE** element in effecting change in oral health service delivery
- Many components of effective workforce policy
  - Educational pipeline – formal education and training programs, continuing education, competency based training models (AL and AK)
    - Changes in curricula to accommodate expanded competencies, new technology, and emerging science
  - Accreditation of programs (CODA)
  - Certification and licensure of professionals (National and State)
  - Scope of practice that assures ability to work to full level of competency
- Structural changes/ passive supports are necessary to enable workforce activities
  - Supportive regulation
  - Appropriate reimbursement methodologies
  - Enabling technology
  - Opportunity for employment/practice in expanded settings

# There are Many Impacts of a Shifting Paradigm on the Oral Health and Health Workforce

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- **Expansion of roles for existing workforce**

- Expanded function dental assistants (EFDAs)
- Public health dental hygienists (PHDHs), Independent practice dental hygienists (IPDHs), Collaborative practice dental hygienists

- **New workforce models**

- Community dental health coordinator
  - Stand alone credential or add on for the DH or the DA
- Dental Therapists (AK) – Dental Hygiene Therapists (MN, VT, ME, AZ)
  - Basic restorative services
  - MA, CT, KS, MD, ND, NH, OH, NM, etc. considering some form
  - WA and OR demonstrations in native communities

- **Engagement of medical professionals**

- Interprofessional education, Smiles for Life
- Training primary care clinicians to screen and refer and medical assistants and nurses in application of fluoride, especially for children
- Movement towards integration of health services especially in safety net settings

# Oral Health Teams Are Constituted Differently in Different Settings

## Federally Qualified Health Centers

- Dentists
- Dental Students
- Dental Residents
- Dental Therapists/Dental Hygiene Therapists
- Expanded Function Dental Assistants
- Dental Assistants
- Dental Hygienists
- Public Health Dental Hygienists
- Community Dental Health Coordinators
- Community Health Workers
- Medical clinicians
- Social Workers



## Primary Care Medical Practice

- Physicians – Family practice, Internal Medicine, Pediatrics
- Physician Assistants
- Nurse/ Nurse Practitioners
- Medical Assistants
- Dental Hygienists



## Schools

- School Nurses
- School Secretary
- Dentists
- Dental Hygienists
- Dental Assistants

## Skilled Nursing Facilities

- Medical Directors
- Dentists
- Dental Hygienists
- Certified Nursing Assistants



# Teams also Differ Depending on the Modality for Care Delivery

- **Mobile Dentistry**

- Dentists
- Dental Hygienists
- Dental Assistants
- Patient Navigators
- Logistics Coordinators
- Liaisons at Host Facility

- **Teledentistry**

- General Dentists
- Specialty Dentists
- Dental Hygienists
- Information Technology Personnel
- Patient Navigators

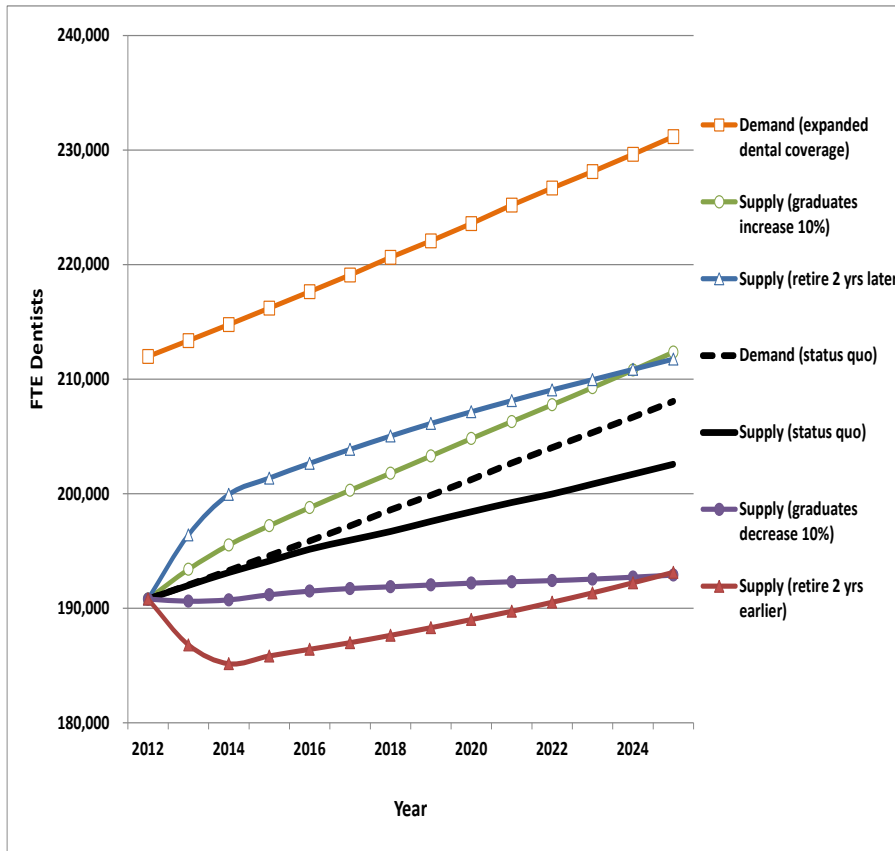


# The Supply of Dentists and Their Changing Demographics

Potential Impacts on Access  
to Care

# Researchers Continue to Count But Do So in the Context of Demand

## Projected Dentist Supply, 2012-2025



Source: IHS, Inc.

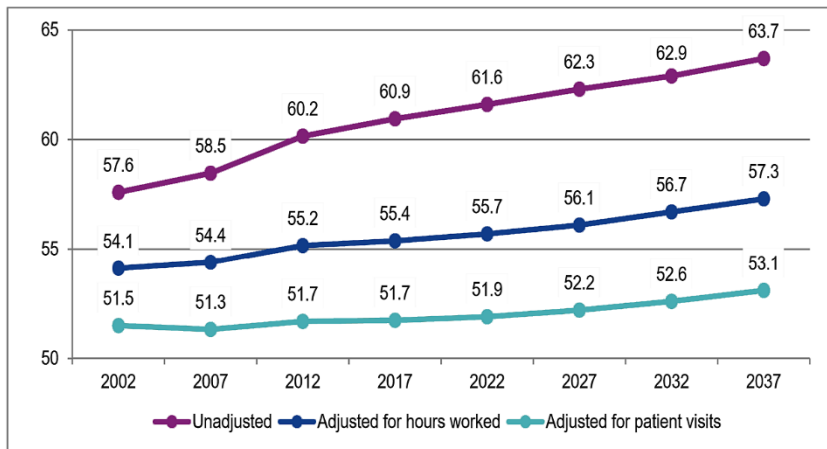
- Supply of dentists in the US will grow from 190,000 in 2012 to 202,600 in 2025 (Status Quo) (6% increase)
- Demand for dentists in the US will grow from 197,800 in 2012 to 218,200 in 2025 (Status Quo) (10% increase)
- HRSA's model estimates increasing supply but worsening shortage (estimated as 7,800 FTE dentists in 2012 increasing to 11,800 FTE dentists in 2025 under Status Quo scenario)

U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. National and State-Level Projections of Dentists and Dental Hygienists in the U.S., 2012-2025. Rockville, Maryland, 2015.

# Supply Estimates Vary Depending on the Selected Scenario

- In 2017, 198,517 practicing dentists in the US equivalent to 60.9 dentists per 100,000 population.
- By 2037, if historical trends persist, the proportion of professionally active dentists to population will rise to 63.7 (approximately 234,900 dentists).

Historical and Projected Dentists per 100,000 Population in the U.S., Baseline Scenario



**Sources:** ADA Health Policy Institute analysis of ADA masterfile; ADA Survey of Dental Practice; ADA Survey of Dental Education; U.S. Census Bureau, Intercensal Estimates and National Population Projections

## Summary of Workforce Projection under Nine Scenarios for Dentists per 100,000 Population, Adjusted for Hours Worked

Assumptions		Projections					Description
Inflow rate	Outflow rate influenced by	2017	2022	2027	2032	2037	
1% annual growth in graduates per year after 2022	Economic downturn by end-of-year 2022	55.4	56.5	56.9	57.9	59.5	Highest outcome
	Average U.S. business cycles	55.4	55.7	56.4	57.6	59.3	
	No economic downturn by end-of-year 2022	55.4	55.3	56.1	57.4	59.2	
Graduates per year remain constant after 2022	Economic downturn by end-of-year 2022	55.4	56.5	56.7	57	57.5	
	Average U.S. business cycles	55.4	55.7	56.1	56.7	57.3	Baseline scenario
	No economic downturn by end-of-year 2022	55.4	55.3	55.9	56.5	57.2	
1% annual decline in graduates per year after 2022	Economic downturn by end-of-year 2022	55.4	56.5	56.4	56.1	55.6	
	Average U.S. business cycles	55.4	55.7	55.9	55.7	55.4	
	No economic downturn by end-of-year 2022	55.4	55.3	55.6	55.6	55.3	Lowest outcome

**Sources:** ADA Health Policy Institute analysis of ADA masterfile; ADA Survey of Dental Practice; ADA Survey of Dental Education; U.S. Census Bureau, Intercensal Estimates and National Population Projections. **Notes:** Data for 2017 are based on the ADA masterfile. Results after 2017 are projected

# Projections Of Demand Also Vary

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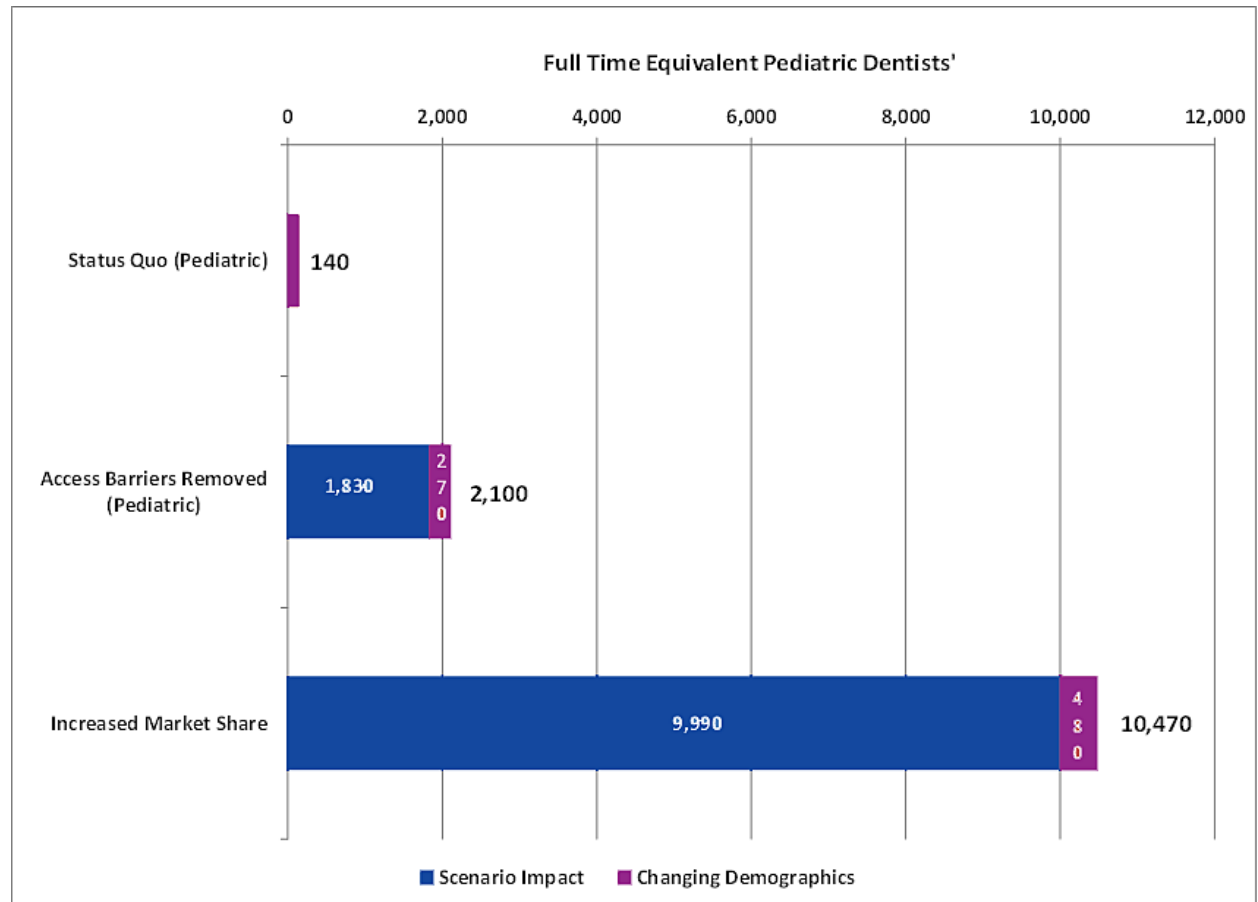
Elkund SA, Bailit HL. *Estimating the Number of Dentists Needed in 2040. Journal of Dental Education. August 2017 81(8)146-152.*

- Currently between 42% and 67% of US population receives a dental service each year (Manski and Brown, 2016, NCHS, 2015)
- Dentists treat on average 1,000 to 1,575 patients each year
- 40% of dentists report not being as busy as they would like
- Large group practices growing – by 2040 only 25% to 30% may be in solo practice
- Between 65% and 80% of services are currently routine recall diagnostic and preventive services eg over two-thirds of visits mainly require time of allied dental personnel (Elkund)
- ADA estimates approximately 240,000 dentists in 2040. If 70% are in full time practice the supply would be approximately 168,000.
- Demand for dentists in 2040, considering numerous factors (including population growth) would likely range from 80,000 FTE dentists to 127,000 FTE dentists
- Authors estimate an oversupply of 32% to 110%.

# Specialty Dentist Demand Will Also Change Over Time

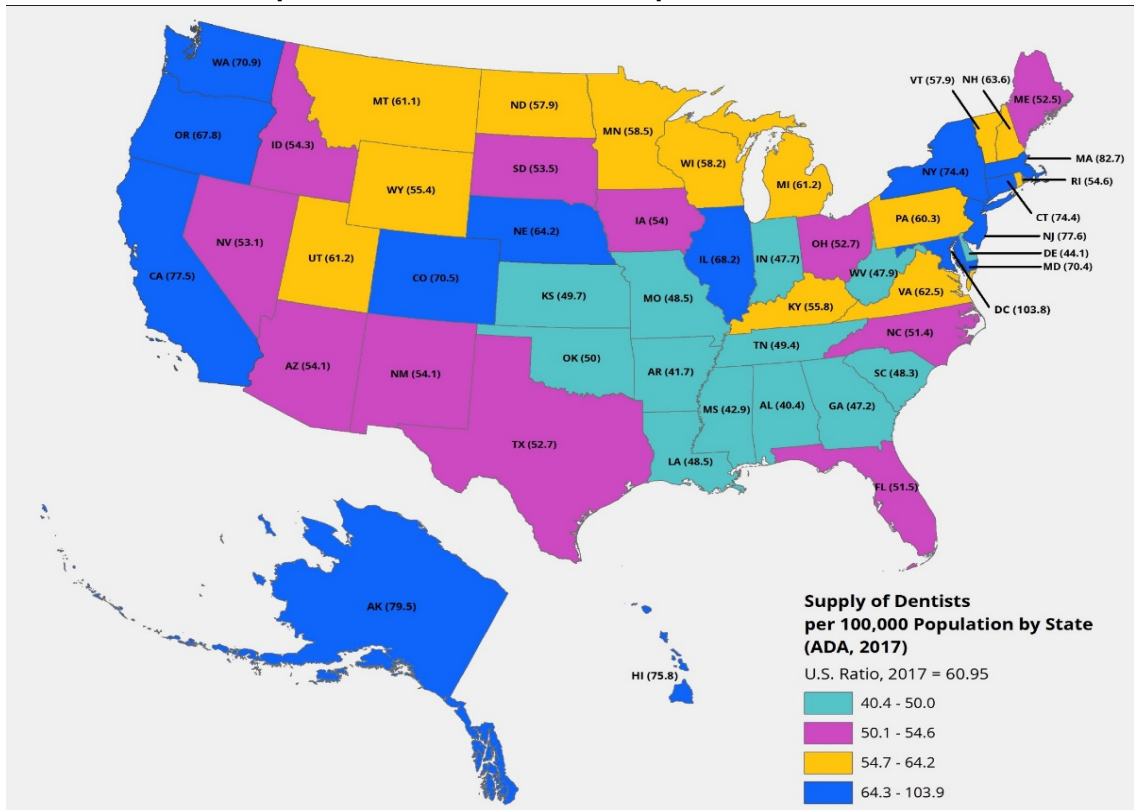
- Pediatric dentists currently provide about a quarter of all dental care for children.
- If all children received dental services at the same rate or if pediatric dentists increased their share of children's dental services, more pediatric dentists will be needed than in the status quo scenario

## Projected Change in Pediatric Dentist Demand, 2016-2030



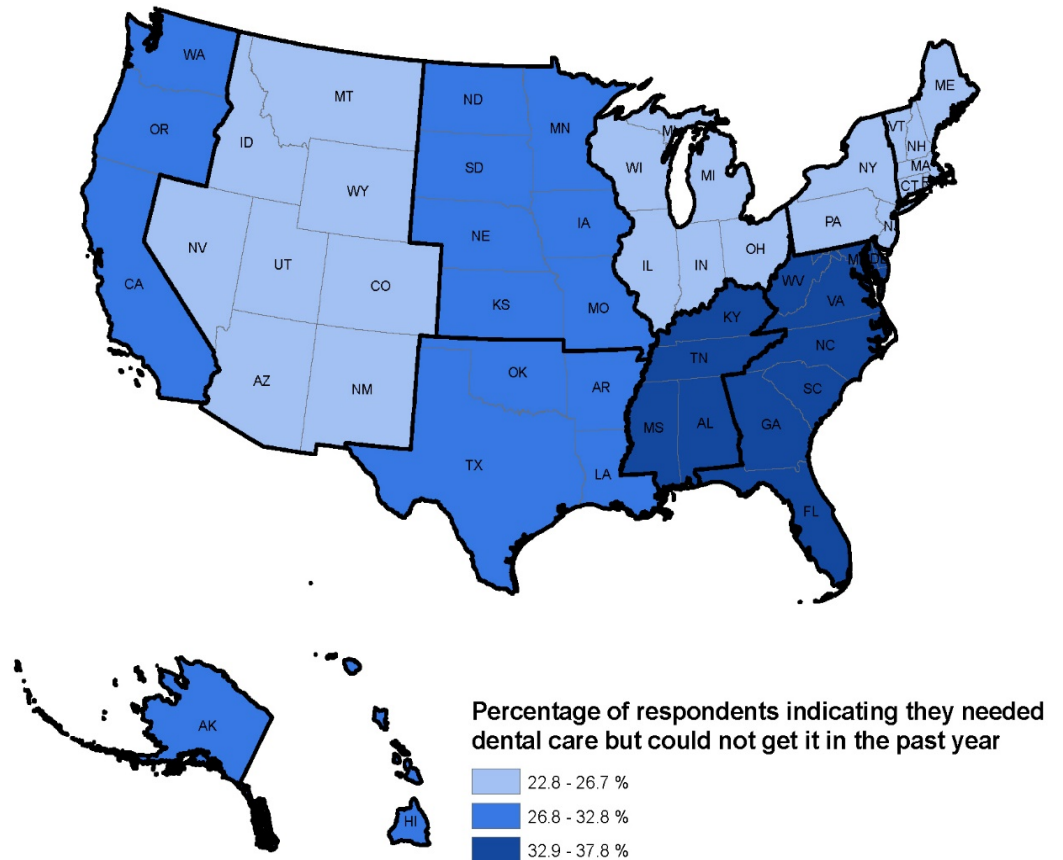
# Concerns about Uneven Distribution Persist

- Dentists are not evenly distributed with the population
- Preference for practice in metropolitan/suburban areas



# Consumers Report Needing but Being Unable to Get Care

- Survey of a representative sample of the US population (OHWRC, unpublished)
- 5,184 consumers needed dental care in past 12 months
- Approximately 29.1% of those who needed services did not get dental care
- Various reasons – dental insurance, waiting times, travel times, etc.



Residence	%
<b>Census region/division of residence</b>	
<b>Northeast</b>	
New England	24.0%
Mid-Atlantic	24.4%
<b>Midwest</b>	
East North Central	22.8%
West North Central	27.8%
<b>South</b>	
South Atlantic	33.0%
East South Central	37.8%
West South Central	32.7%
<b>West</b>	
Mountain	26.7%
Pacific	32.8%
<b>All</b>	<b>29.1%</b>



# Demographic Shifts in the Workforce May Impact Supply, Distribution or Practice Patterns

- Changes in the gender composition of the workforce
- In 2016, 192,260 dentists – 70.2% male
- 15.7% of female dentists and 8.2% of male dentists are from underrepresented minority groups
- 23.4% of female dentists and 12.1% of male dentists are Asian

## Race Ethnicity of Dentists by Gender, 2016

Characteristics, 2016	Female Dentists					Male Dentists				
	2010	2012	2014	2016	% change 2010-2016	2010	2012	2014	2016	% change 2010-2016
<b>Race/ethnicity</b>										
White	62.3%	61.8%	61.3%	60.9%	-2.2%	82.4%	81.7%	80.8%	79.8%	-3.2%
Black or African American	6.7%	6.6%	6.4%	6.0%	-11.0%	3.0%	3.0%	3.0%	2.9%	-2.7%
Hispanic	7.9%	7.7%	7.9%	7.9%	-0.3%	3.8%	3.8%	4.0%	4.2%	8.3%
Asian	22.3%	22.6%	23.0%	23.4%	5.1%	10.4%	10.8%	11.5%	12.1%	16.5%
Other <sup>1</sup>	0.8%	1.3%	1.4%	1.8%	137.3%	0.4%	0.8%	0.8%	1.1%	151.2%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

Source: ADA Masterfile, 2016. OHWRC, 2018

# Gender Differences in Practice

- Proportionately fewer female dentists practice in rural areas
- Fewer females are owner dentists - age may affect ownership status
- Mean age – females (43.9 yrs), males (52.8 yrs)

## Dental Practice Ownership and Geographic Location, 2016

Characteristics	Female Dentists		Male Dentists	
	n	%	n	%
<b>Practice Type</b>				
Non-owner	15,046	39.6%	17,783	16.2%
Owner	22,987	60.4%	92,075	83.8%
Total	38,033	100.0%	109,858	100.0%
<b>Practice Location</b>				
Rural areas	398	0.8%	1,524	1.3%
Small town	873	1.8%	3,683	3.0%
Micropolitan	2,142	4.4%	8,361	6.9%
Metropolitan	1,684	3.5%	4,656	3.8%
Large metropolitan	43,506	89.5%	103,258	85.0%
Total	48,603	100.0%	121,482	100.0%

Source: ADA Masterfile, 2016, OHWRC, 2018

# Gender Differences in Practice

- Female dentists between 36 and 65 years of age who are owners of dental practices are significantly more likely than male dentist practice owners in the same age cohort to treat patients covered by public insurance.

## Adjusted Effects of Female vs. Male Dental Practice Owners on Treating Patients With Public Insurance

Dentists	Prevalence Ratio	95% Confidence Interval		P-value
		Lower Limit	Upper Limit	
<b>Female vs. Male</b>				
≤35 years of age	0.84	0.70	1.02	0.0859
36-45 years of age	1.72	1.53	1.94	<.0001
46-55 years of age	1.30	1.20	1.40	<.0001
56-65 years of age	1.80	1.60	2.03	<.0001
≥66 years of age	0.55	0.39	0.76	0.0003

Source: ADA Survey of Dental Practice, 2016, OHWRC, 2018

# Racial Ethnic Composition of the Workforce is Also Important

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## Study of Underrepresented Minority Dentists (URM) (Mertz et al, 2016)

- To examine distribution of minority dental providers and the extent to which minority patients depend on minority providers for dental care.
- 2012 sample survey of underrepresented minority dentists (34% response rate).

## Key Findings

- Black dentists are 3% of dentist population; 19% of the US population is Black
- Hispanic/ Latino (H/L) dentists are 2.8% of dentists; 22% of the US population is H/L
- American Indian/Alaska Native (AI/AN) dentists are 0.2% of dentists; 1.4% of the US population is AI/AN

To bring URM dentist population to parity with the US population would require:

- 19,714 Black dentists
- 31,214 Hispanic/Latino dentists, and
- 2,825 American Indian/Alaska Native Dentists (AI/AN)

To bring workforce to parity with the population:

- 53,753 total URM = 10 years of US dental graduates

# Strong patient/provider concordance

Percent of Patients Treated by URM Dentists				
Patient Pop.	Dentist Group			
	Black	AI/AN	H/L	Total
Black	<b>44.9</b>	12.8	13	29.2
AI/AN	3.7	<b>20.4</b>	3.9	4.7
H/L	19.8	13.7	<b>41.8</b>	30.1
<i>URM Average</i>	<i>58.8</i>	<i>37.6</i>	<i>50.5</i>	<i>54.1</i>
White	30.9	54.6	39.5	35.8
Asian	5.9	8.2	6.4	6.2

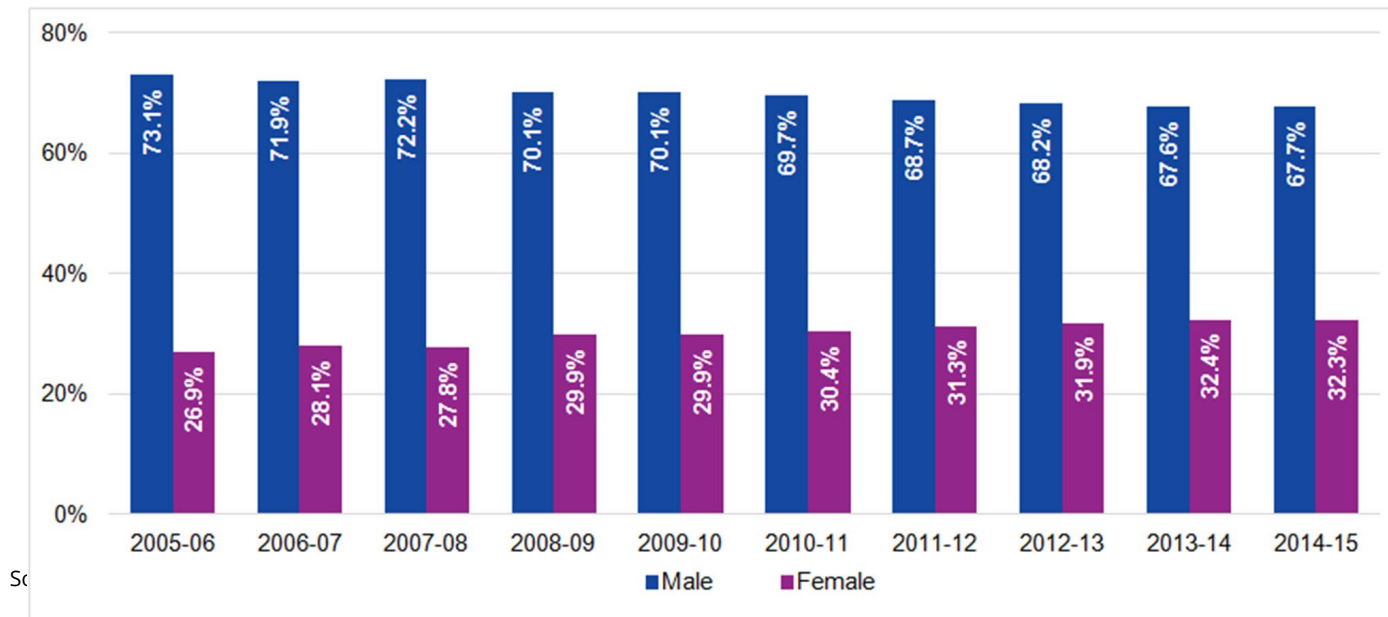
Source: Mertz et al

Note: Totals exceed 100% because race and Hispanic/Latino ethnicity are not mutually exclusive categories.

# The Demographics of Faculty in Dental Schools are also Changing

- In 2014-15, the gender mix among dental faculty was similar across regions with dental schools in the Midwest reporting slightly more female faculty members (33.7%) than nationally

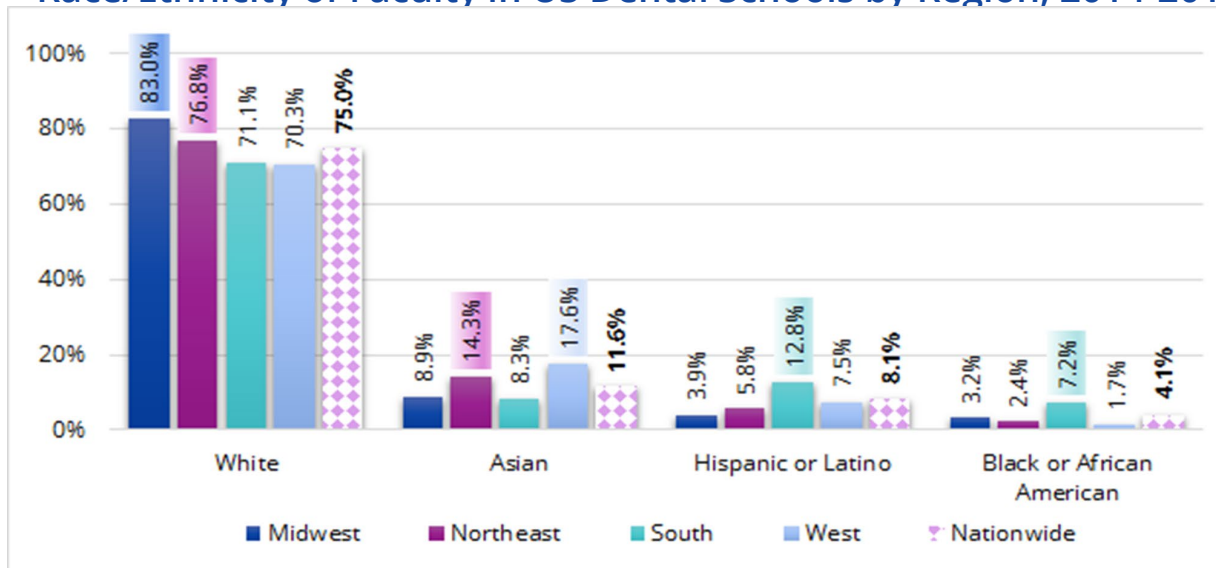
## Ten Year Trend of Dental Faculty in US Dental Schools by Gender, 2005-06 to 2014-2015



# Dental School Faculty is Slowly Diversifying

- In 2009-10, 81.3% of dental school faculty in the US was White; in 2014-15, 75.0% of faculty was White.
- In 2014-15, dental schools in the Midwest reported proportionally more White faculty, the Northeast more White and Asian faculty, the South more Hispanic/Latino and Black/African American faculty, and the West more Asian faculty than nationally

Race/Ethnicity of Faculty in US Dental Schools by Region, 2014-2015



Source: American Dental Education Association, 2014-15, OHWRC, 2016

# What are the Policy Questions that Arise from These Data?

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- Will there be too many or not enough clinicians to address the oral health needs of the US population?
- How do we encourage diversity in the workforce?
- Will preference for urban practice further compromise access to services in rural areas? What programmatic interventions might mediate distribution issues?
- What provider mix is optimal to assure high quality, low cost, available oral health services?
- How should public resources be used to encourage equitable access and achieve health equity?



# An Example of Our Project Work

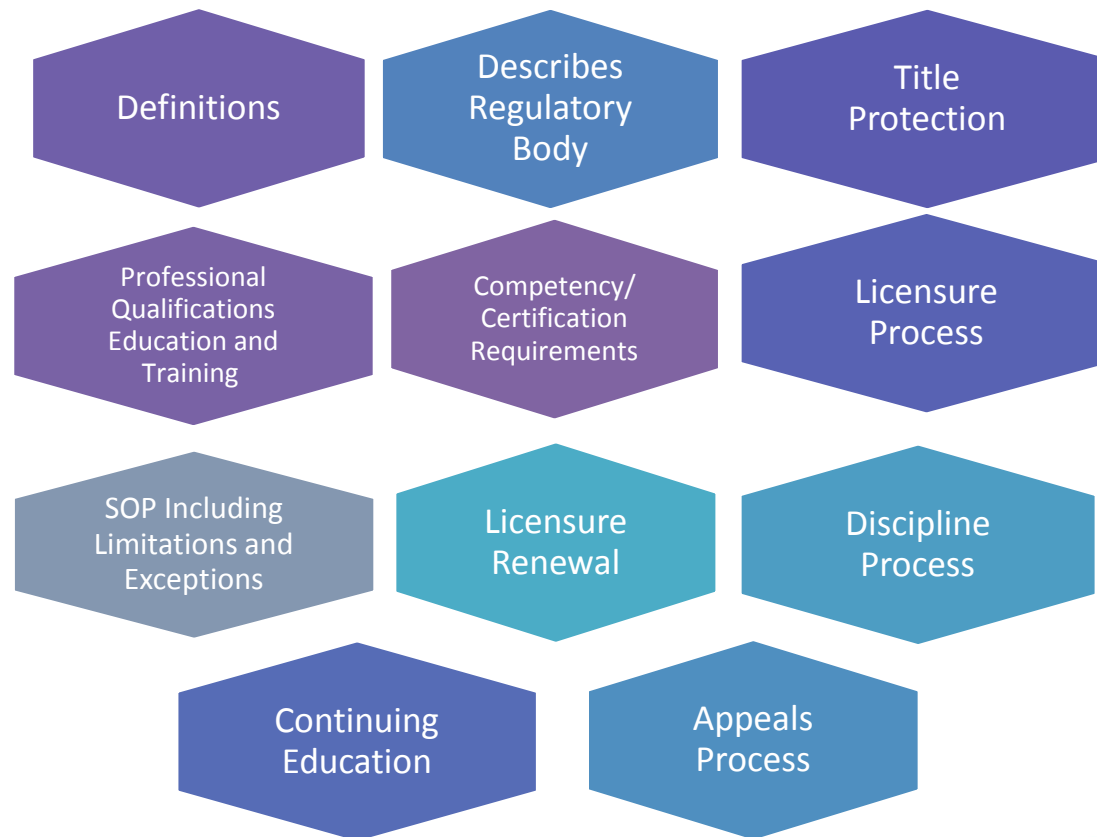
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## Impacts of Regulation on Delivery of Oral Health Services:

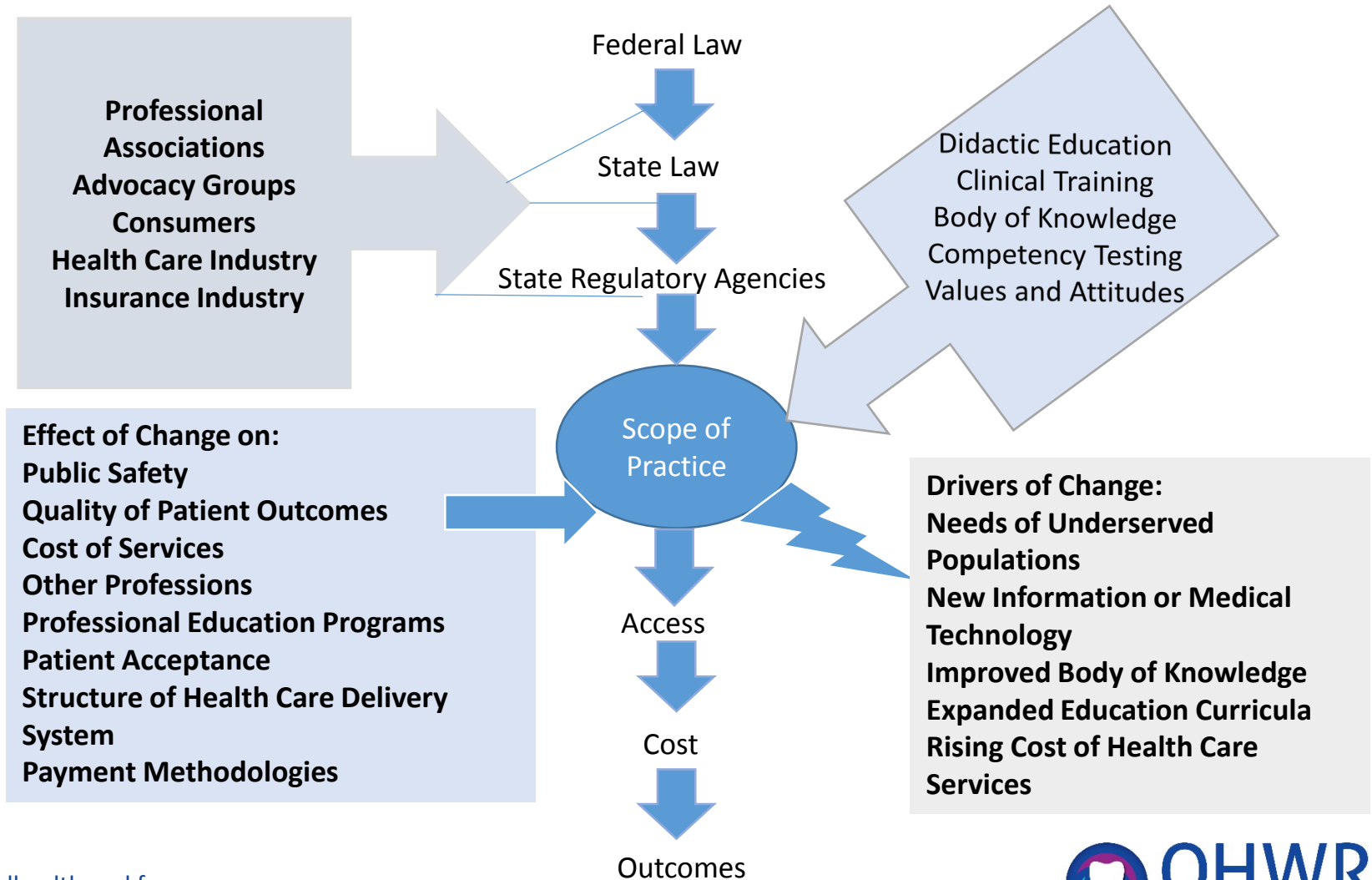
How does state workforce policy impact the availability of oral health services?

# In the U.S., States Are Primarily Responsible for Regulating Health Professions

## State Regulations



# Scope of Practice Evolves with Changes in the Knowledge Base, Progress in Science and Technology, and Stakeholder Efforts to Increase Access



# Scope of Practice Variation Impacts Outcomes

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- State by state variation in approaches to expanded practice but results are similar
- Strategies for reducing oral disease burden emphasize education, prevention, early intervention, and risk management.
- The new approach to oral health requires engagement of an inclusive oral health care team, especially dental hygienists.
- Dental hygienists are increasingly able to practice in public health and community settings and to provide a broader range of services in those settings
- Progression in scope of practice has impacted professional roles
  - Can physicians supervise dental hygienists in medical settings?
- There is a changing perception of dental hygienists –no longer viewed simply as a dental extender but now seen as a preventive oral health specialist
- Question: Does expansion of scope of practice impact oral health outcomes in the population?

# Dental Hygienists and the 2001 and 2004 Dental Hygiene Professional Practice Index

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- Scope of practice (SOP) varies considerably by state
  - assorted models of public health supervision practice
- Differences in permitted tasks and required supervision by state impact service delivery
- Important to assess the impact of variation in SOP by state on oral health outcomes
- No numerical measure to permit comparison
- Dental Hygiene Professional Practice Index (DHPPI):
  - Developed in 2001
  - State scoring update in 2014
  - New index with revised variables and scoring was created in 2016
- DHPPI contains numerous variables grouped into 1 of 4 categories:
  - Regulation, supervision, tasks, and reimbursement
- Numerical scoring based on each state's law and regulation
  - Possible composite score from 0-100

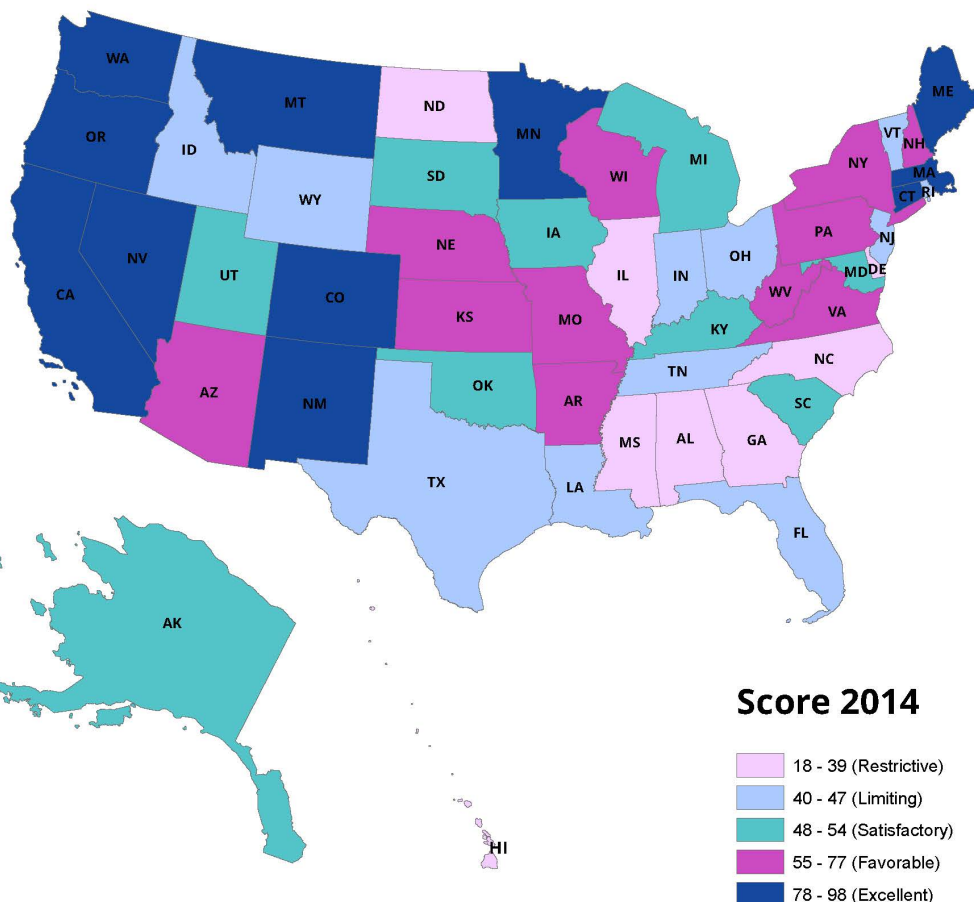
# State DHPPI Scores in 2001 and 2014

- **Descriptive analysis**  
2001 scores -10 in West Virginia, 97 in Colorado  
2014 scores -18 in Alabama and Mississippi, 98 in Maine.  
Mean score on the DHPPI 43.5 (2001) ↑ 57.6 (2014)
- **Factor Analysis**  
In 2014, exploratory and confirmatory factor analysis confirmed that the component structures were all aspects of the overarching concept (in this case scope of practice)
- **Statistical analysis**  
In 2001, SOP was positively but not significantly associated with the percent of the population in a state having their teeth cleaned by a dentist or dental hygienist in the past year.

*Research question in 2014: Is SOP associated with population oral health outcomes?*

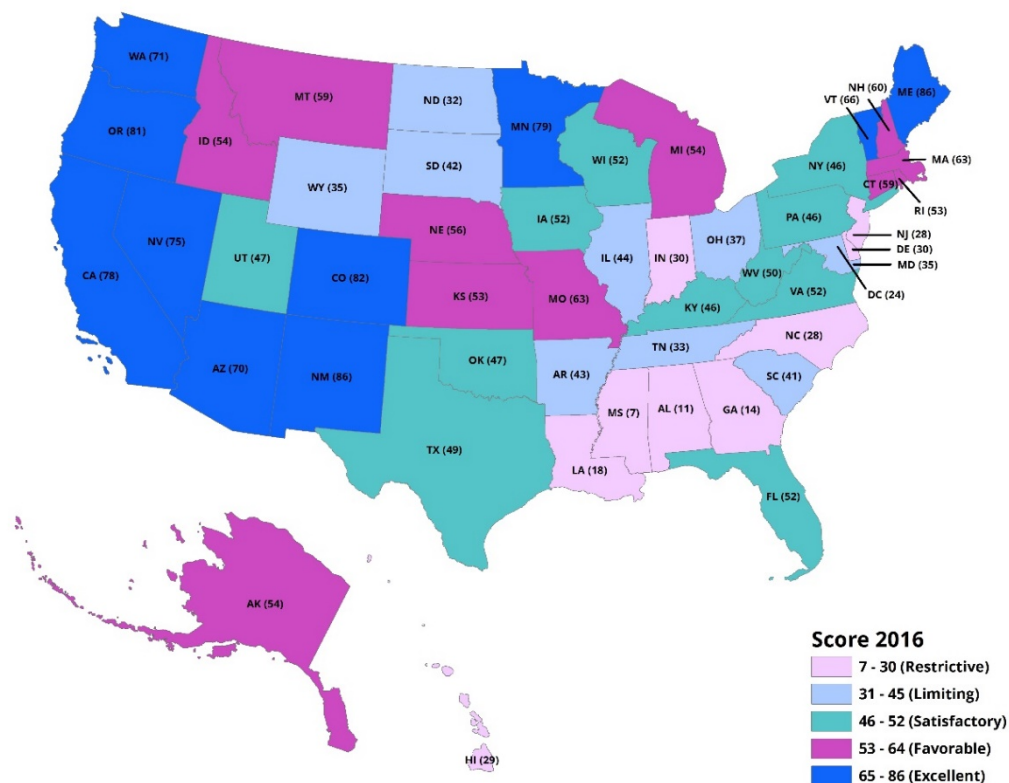
Used multilevel logistic modeling with the DHPPI and BRFSS data controlling for state and individual level factors including community water fluoridation, demographic and socioeconomic factors.

**Finding:** More expansive SOP for DHs in states was positively and significantly associated ( $p < 0.05$ ) with having no teeth removed due to decay or disease among individuals in those states (published in December 2016, *Health Affairs*)



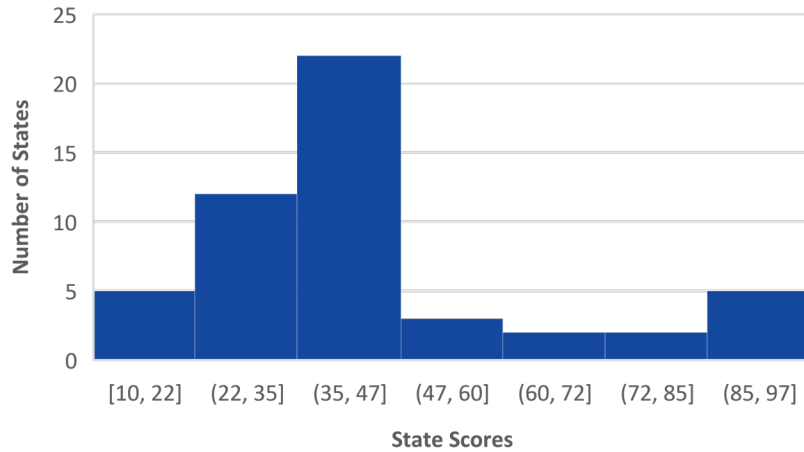
# The 2016 DHPPI

- Finding from 2014 update – variables in 2001 DHPPI no longer adequately represented SOP
- Dental hygienists now seen as experts in prevention education and services
  - More autonomous roles
  - Team based care
  - New technologies
  - New settings for care delivery
  - Point of entry - case finding
  - Roles as case managers/patient navigators
- Design process for the new DHPPI included focus groups with dental hygienists
  - Some variables were retained or modified
  - New variables were added
  - Fewer variables overall
  - Scoring weights were redistributed
  - New variables e.g., dental hygiene therapy, use of lasers, and basic restorative tasks
- Factor analysis again confirmed the integrity of the construct
- As expected, scores were lower on the new index
  - Range of scores was 7 in Mississippi to 86 in Maine
- Currently in the process of analyzing the impact of SOP on outcomes using the most recent BRFSS

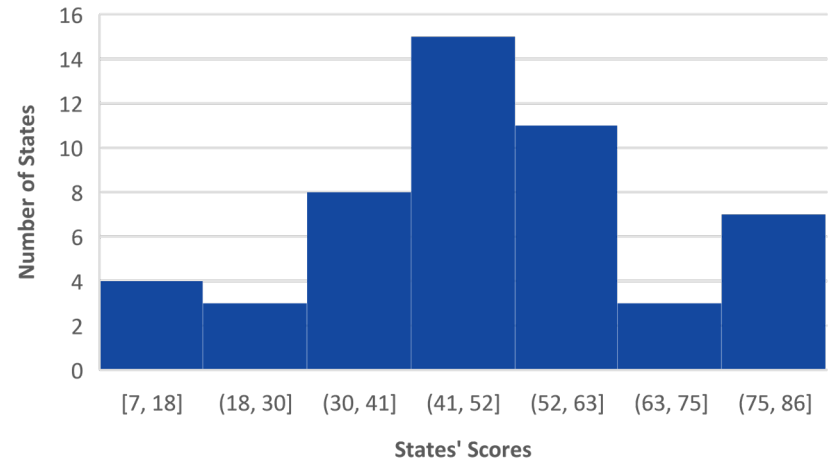


# Changing Scope of Practice for Dental Hygienists - 2001, 2014, 2016

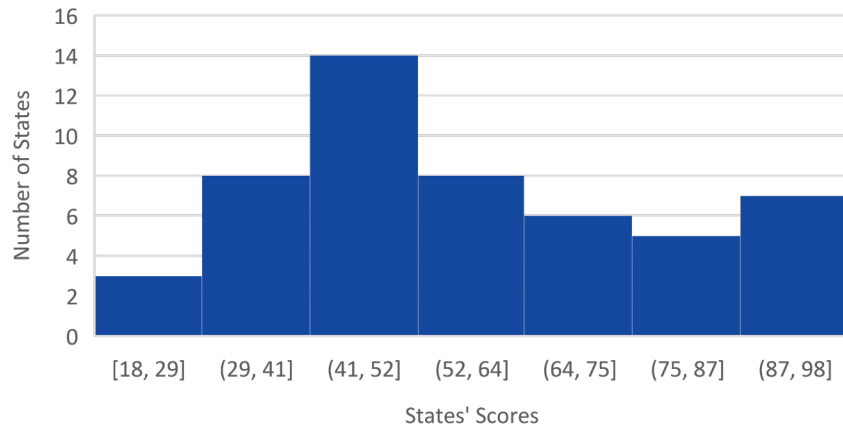
2001



2016



2014



High scoring states in 2014 were also high scoring on the new index (e.g., ME, CO, CA, WA, NM were each classified as excellent environments at each scoring)

Some states were innovators in expanding practice opportunities for dental hygienists (e.g., MN with advanced dental therapy, VT recently enabled dental therapy; the model requires professionals to also be dental hygienists)

Other states used a slower, more incremental approach to increasing scope of practice (e.g., IA classified as satisfactory at each scoring)

Some low scoring states were consistently low scoring (e.g., GA, MS, NC classified as restrictive at each scoring)

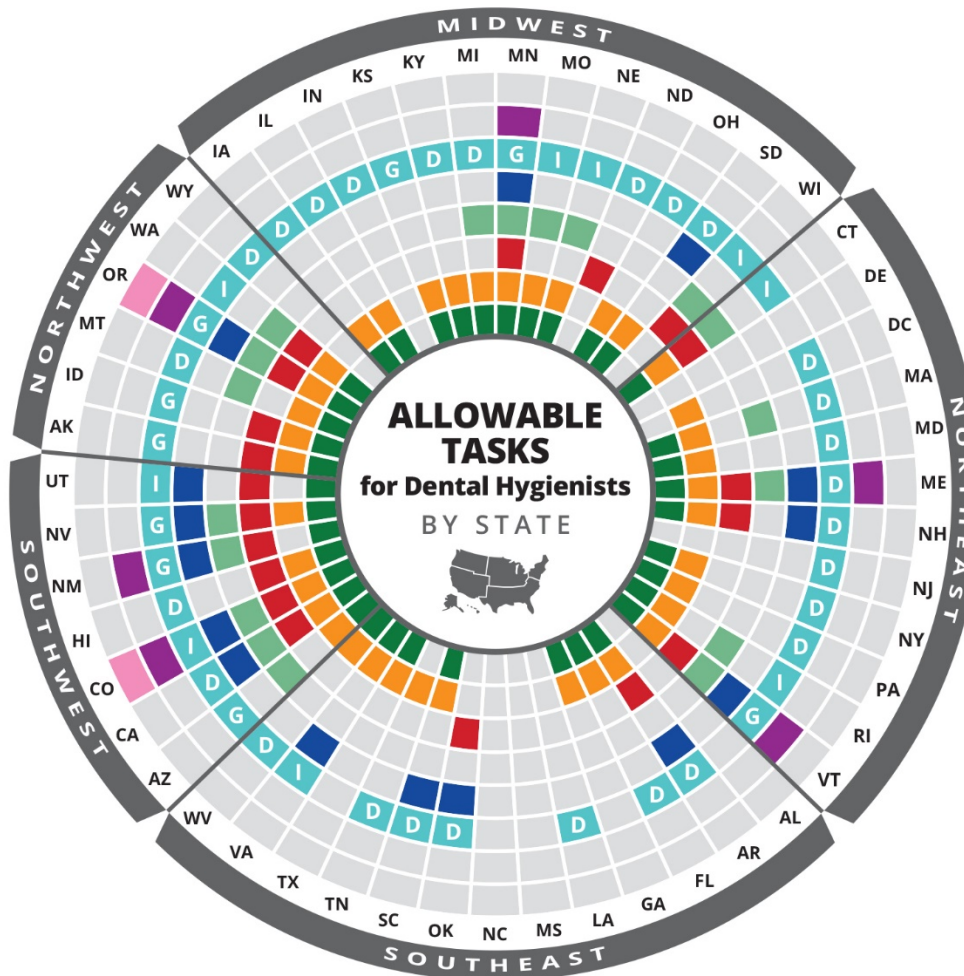


# Developing a Dental Hygiene SOP Infographic: Why and How

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- Research finds that broader SOPs for DHs are associated with better oral health outcomes in a state
- There is substantial variation in DH SOP across states, but **no easily used tools to help policy makers** understand these differences
- **How do we distill the complicated DHPPI into a useable instrument for policymakers?**
- OHWRC in collaboration with ADHA conducted a series of focus groups of dental hygiene leaders from across the country to identify the key DH functions and tasks to include in an infographic

# Variation in Dental Hygiene Scope of Practice by State



The purpose of this graphic is to help planners, policymakers, and others see differences in legal scope of practice across states, particularly in public health settings.

Research has shown that a broader scope of practice for dental hygienists is positively and significantly associated with improved oral health outcomes in a state's population.<sup>1,2</sup>

- Dental Hygiene Diagnosis
- Prescriptive Authority
- Local Anesthesia
  - D Direct
  - I Indirect\*
  - G General
- Supervision of Dental Assistants
- Direct Medicaid Reimbursement
- Dental Hygiene Treatment Planning
- Provision of Sealants
- Direct Access to Prophylaxis
- Not Allowed / No Law

\* In Colorado, indirect supervision requires only preapproval, not the presence of a dentist.

Sources: 1. Langelier M, Baker B, Continelli T. *Development of a New Dental Hygiene Professional Practice Index by State*, 2016. Rensselaer, NY: Oral Health Workforce Research Center, Center for Health Workforce Studies, School of Public Health, SUNY Albany; November 2016. 2. Langelier M, Continelli T, Moore J, Baker B, Surdu S. Expanded Scopes of Practice for Dental Hygienists Associated With Improved Oral Health Outcomes for Adults. *Health Affairs*. 2016;35(12):2207-2215.

[http://www.oralhealthworkforce.org/wp-content/uploads/2017/03/OHWRC\\_Dental\\_Hygiene\\_Scope\\_of\\_Practice\\_2016.pdf](http://www.oralhealthworkforce.org/wp-content/uploads/2017/03/OHWRC_Dental_Hygiene_Scope_of_Practice_2016.pdf)

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This graphic is for informational purposes only and scope of practice is subject to change. Contact the applicable dental board or your attorney for specific legal advice.



Last Updated February 2017.

# Conclusions and Next Steps

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- SOP is an important consideration when designing workforce strategies to increase access to and utilization of preventive oral health services
- Placing DHs in community settings and enabling service delivery with autonomy within professional competencies may improve outcomes
- In the process of analyzing data to determine the impact of scope of practice on access to oral health services and on oral health outcomes for children
- Preliminary analysis suggests an interaction effect which would support the importance of oral health care teams
- There may be a tipping point at which scope of practice expansion makes a significant difference relative to the oral health of the population. This is an area for further research.

# Some Examples Of Local Innovation and Delivery Programs that Improve Access to Oral Health Services

Each of the following examples utilizes different resources and program design determined by available workforce, insurance regulation, and regulatory policies in respective state

# There is No Standard Template for Program Design

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- Service provision varies
- Program design is determined by
  - Need in the population
  - Evaluation of existing oral health resources and providers in communities
  - State regulation regarding requirements for dental supervision of allied dental workforce
  - Scope of practice laws related to practice of dental hygiene and dental assisting
  - Insurance regulation regarding reimbursement for services

# State Strategies To Provide Opportunities for Expanding Access Differ

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**Maine** enabled several types of dental hygiene

- The dental hygiene therapist
- Expanded function dental assisting
- Dental hygienists in expanded roles can bill Medicaid directly
- Into the Mouths of Babes

**Oregon** uses demonstration/pilot authority to test innovation.

- Pilot program in Teledentistry
- Northwest Portland Area Indian Health Board pilot project

# State Sponsored Initiatives in Conjunction with Local Programs Impact Access

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- **Michigan** has enabled a robust public health dental hygiene program
  - Approximately 200 dental hygienists work in 50 public health programs
  - has contracted with Delta Dental to manage dental services for Medicaid eligible children in the state through the Delta Healthy Kids dental program
- **Points of Light** - a Website to connect children with dentists – links pediatricians to community dentists willing to treat Medicaid insured children
- **Calhoun County** – pay it forward oral health initiative
- **My Community Dental Centers** – a consortium of 19 county and regional departments of health, the largest group dental practice in the state

# Access Dental Locates in Places Accessible to High Needs Patients

- Mobile van program with a focus on special needs patients
- Delivers services in 86 facilities in 23 counties in North Carolina
- Patient populations with compromised access to oral health services
- Dentists and dental hygienists provide services in the regional center for infectious diseases for HIV positive patients 3 to 5 days a month where they can interface with infectious disease specialists as needed
- The program provides a full range of dental services including dentures
- The founding dentist also provides surgical services in hospitals near patients' homes





# Mobile Services Are Part of a Comprehensive System of Oral Health Service Delivery in Rochester, New York

- The SMILEmobile program at Eastman Institute for Oral Health
- 5 mobile dental units that routinely locate at neighborhood schools attended by children from low income families in Rochester, NY
- One unit is equipped for special needs populations
- Serves dental needs of 2,000 children in 17 schools
- In the summer units travel to surrounding counties to serve adults and children in need of services. For many students, the mobile van is their dental home
- Referrals to school based health centers and the Institute's specialty clinic are routine for children with extra need



# A System of Care in Colorado Incorporates A Fixed Clinic, A Mobile Program, and Teledentistry

- Dental hygienist-founded independent practice, Senior Mobile Dental
- Mission to provide preventive oral health services for elders, especially residents of skilled nursing facilities
- Now a full service dental provider operating a fixed dental clinic and a mobile program, servicing:
  - residents of a municipal housing project
  - elders in community centers,
  - residents of nursing homes, and
  - seniors in rural areas
- Uses store and forward Teledentistry applications
- The dental hygienist provides preventive services for the patient in the skilled nursing facility using portable equipment
- Dentist can log into the patient record to formulate a treatment plan



# An FQHC In Pennsylvania Uses Dental Hygienists with Different Credentials To Improve Access

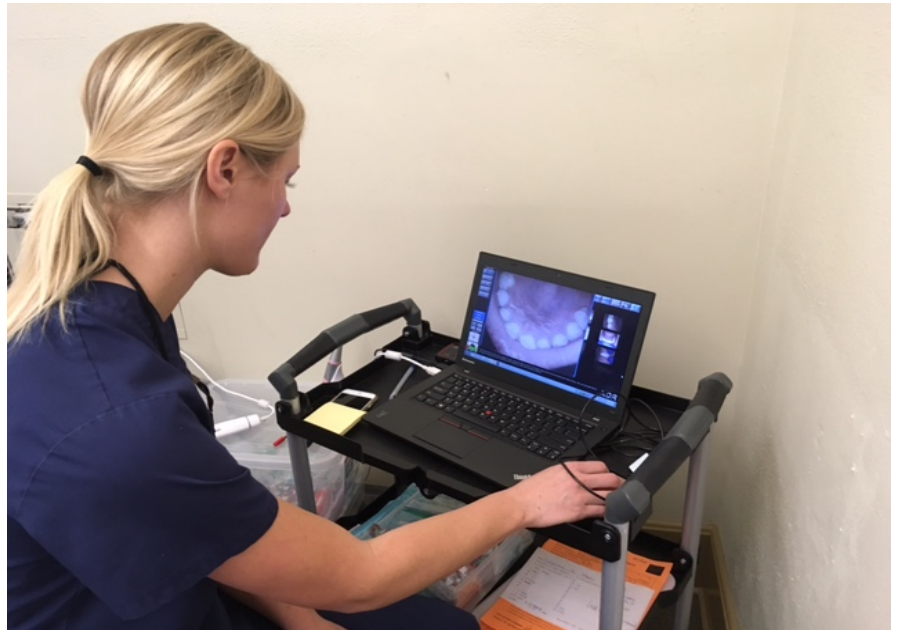
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- Wayne Memorial Community Health Center, FQHC affiliated with the local hospital system
- County's only dental provider participating in state Medicaid program
- Uses expanded practice workforce in fixed clinic
- Integrates oral health into primary care practices
- Provides mobile services
- In the dental clinic, dental hygienists prep patients for restorative services providing local anesthesia
- EFDAs place and carve restorations after dentist preps the tooth
- Public health dental hygiene practitioner employed by the FQHC is certified as a community dental health coordinator
- Provides outreach, case finding, community education, and preventive oral health services in primary care practices, schools and Head Start programs



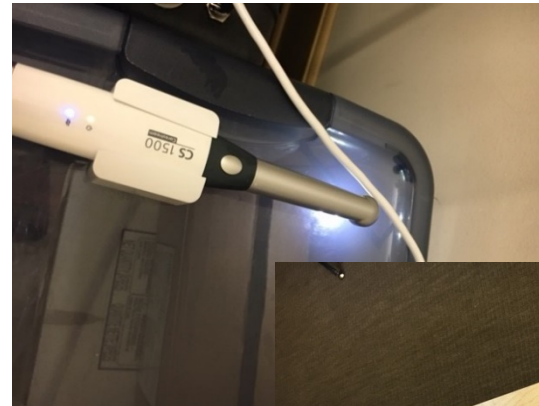
# Teledentistry Services in Rural Western New York Are a Gateway to a Dental Home

- Teledentistry services at Finger Lakes Community Health Center focus on children's specialty dental services
- Children generally from low income families in rural areas
- Synchronous specialty dental consults in real time
- The dental specialist/pediatric dentist is located at the Eastman Institute for Oral Health in Rochester.
- A FLCH dentist or dental hygienist is with the patient at the dental clinic during the consultation.
- 97.2% treatment completion rate (1 to 5 visits) in Rochester
- 77.1% of children subsequently establish a dental home at a FLCH dental clinic



# The Virtual Dental Home in Salem, Oregon Allows Children to Remain in Their Communities for Preventive Services

- A virtual dental home (VDH) uses expanded practice dental hygienists (EPDH) to provide children in schools with preventive oral health services.
- This initiative is sponsored by a dental health maintenance organization (DHMO) that is a dental insurer and also part of a dental service organization (DSO) .
- Serves students from families with a primary language other than English, live in rural areas, and work in agriculture
- EPDHs provide services in schools during the school year and in a pediatrician's office during the summer
- Oregon contracts with coordinated care organizations



# Residents of a Skilled Nursing Facility in NH Routinely Receive Dental Services

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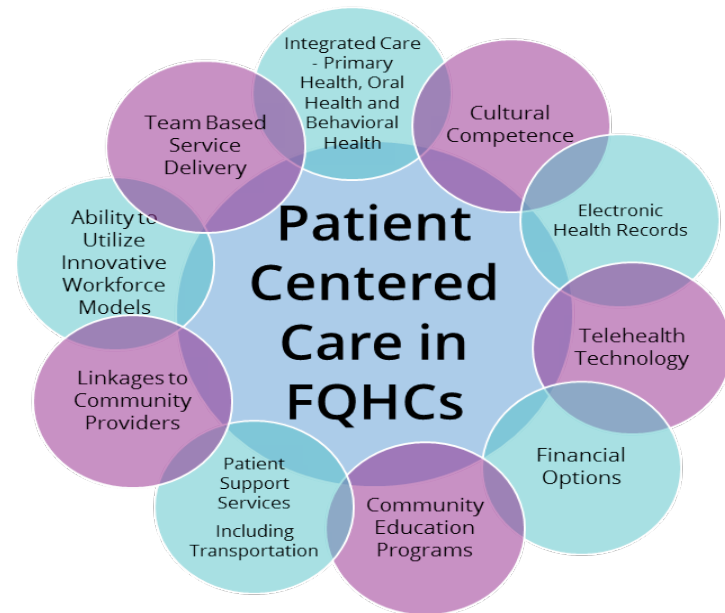
- Northeast Mobile Dental provides services for nursing home residents in 3 states
- Public health dental hygienist in NH collaborates with dentist to provide services in two skilled nursing facilities
- The dentist and dental hygienist alternate weeks in the facility
- The organization is capitated for services



# Integration of Oral Health Services with Primary Medicine

# FQHCS are Important Innovators in the Communities They Serve

- Services are co-located
- Reducing structural barriers to integration
- Warm hand-offs between clinical disciplines
- Provide a comprehensive health home
- Mission driven workforce
- Workforce comprises multiple professions to address social and health needs
- Health care teams have flexible boundaries
- Integrated electronic health records enable continuity of care
- Use innovative oral health workforce models and team based care

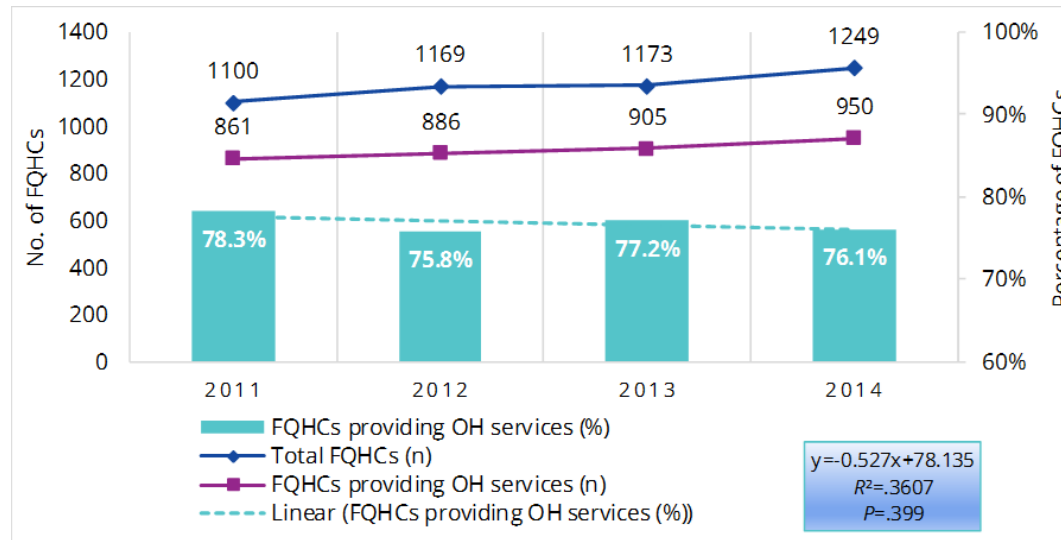




# FQHCs Provide Oral Health Services to More than 6 Million Patients

- Increase in number of FQHCs delivering oral health services between 2011-2014 but decrease in proportion of health centers directly providing oral health services
- Increase in the proportion of preventive services (+ 3.3%), decrease in in percentage of restorative services (-1.3%), oral surgery services (-7.4%) and emergency dental services (-11.7%)

## Four-Year Trend of All FQHCs and FQHCs With Dentist and/or Dental Hygienist FTEs Providing Oral Health Services to At Least 1 Patient Nationwide, 2011-2014



# Strategies Used by FQHCs to Foster Integration Vary

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- Patients receiving oral health services are required to be primary care patients
- DHs are routinely scheduled to provide screening services during periodic well child pediatric visits
- FQHCs engage primary care clinicians with oral health screening and referral
- Offer oral health services in school based health centers, in mobile and portable programs, or using teledentistry
- Embed a dental hygienist in the off-site primary care practices.
- Use a team approach to providing services
- Recognize the importance of building connections with other providers in their local communities

# Some Questions that Arise

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- How can we engage private practice dentists to participate at higher rates in care for the underserved?
- How can the various models for oral health service delivery (mobile/portable, teledentistry) be integrated into mainstream practice?
- Will there be increasing convergence between the private (hierarchical) and public health (team based) models for delivering oral health services in the future? Will new workforce, expanded scopes of practice for existing workforce or shifts to management by dental service organizations act as catalysts for change?
- Are there ways to better integrate health service delivery to accomplish a comprehensive health home?

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# Thank You

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Questions?

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