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

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April 16, 2018
National Oral Health Conference
Louisville, Kentucky

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The Oral Health Workforce Research Center at CHWS

- 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
- These studies were funded under a cooperative agreement with the US Health Resources and Services Administration (HRSA) for an Oral Health Workforce Research Center (OHWRC) based at CHWS
- The OHWRC partners with Elizabeth Mertz at the Healthforce Center at the University of California San Francisco

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The OHWRC is Engaged with Diverse Research Topics

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)

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)
- Teledentistry (case studies/completed)

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Topics (cont.)

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)

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

- 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

Today's Presentation

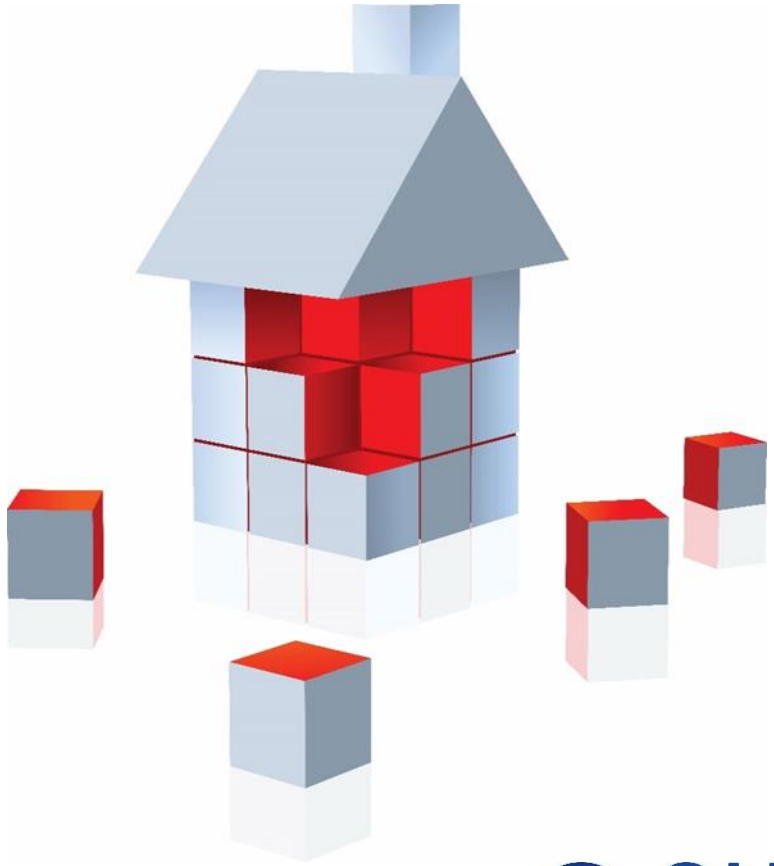
- Overview of our observations on the oral health service delivery system
  - Impacts of health system redesign on oral health
  - Organic growth and local innovation addressing specific community needs
  - Systemic change generating new workforce models and team based service delivery
- Specific examples of two studies completed by the OHWRC about the impact of workforce innovation
  - Several studies of dental hygiene scope of practice expansions and the impact on an oral health outcome
  - Integration of oral health assessment and screening services in physician assistant clinical practice
- Colleagues on the panel will present on other OHWRC studies about delivery system innovation and the dental pipeline

Drivers of Change in Workforce Policy in Recent Years Are Numerous

- Workforce shortages: Dental Health Professions Shortage Areas (800 in 1993; 4900 in 2014)
- Uneven distribution of dentists particularly in smaller population areas
- Changing public policy
- Population demographics
- Racial/ ethnic oral health disparities
- Limited resources to pay for care
- Technology
- Consumer demand for alternative providers
  - Market forces
  - Desire for convenient care – dental support organizations

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

- Oral health service delivery is no longer exclusive to private dental practice.
- Providers are more distributed in location and diverse in constitution
- Care delivery is more 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**



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Effective Workforce Policy is Essential To Achieving Oral Health Program Goals and Actualizing Systemic Goals

- Healthcare workforce is the ACTIVE element in effecting change in oral health service delivery
  - Workforce is often not a primary consideration in policy or program design
- Many components of effective workforce policy
  - Adequacy of educational pipeline, accreditation of programs
  - Certification and licensure of professionals
  - Scope of practice that assures the ability to work to level of competency
- Structural changes/ passive supports are necessary to enable workforce activities
  - Supportive regulation and appropriate reimbursement methodologies
  - Technologic innovation
  - Opportunity to practice in community settings
  - Changes in curricula to accommodate expanded competencies, new technology, and emerging science
- Program design and workforce deployment determined by
  - Local need
  - Regulatory standards and reimbursement environment
  - Available resources to support service delivery

There are Many Impacts of Innovative Service Delivery Programs on the Oral Health and Health Workforce

- **Expansion of roles for existing workforce**
  - Expanded function dental assistants (DAs)
  - Public health dental hygienists (DHs), Independent practice dental hygienists, 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 – Dental Hygiene Therapists
    - Basic restorative services
- **Delivery of services using oral health teams**
- **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

Schools

- School Nurse
- School Secretary
- Dentist
- Dental Hygienist
- Dental Assistant

Primary Care Medical Practice

- Physician – Family practice, Internal Medicine, Pediatrics
- Physician Assistant
- Nurse/ Nurse Practitioner
- Medical Assistant
- Dental Hygienist

Skilled Nursing Facilities

- Medical Director
- Dentist
- Dental Hygienist
- Certified Nursing Assistant

Impacts of Regulation on Delivery of Oral Health Services

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

Scope of Practice Variation Impacts Outcomes

- 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
- 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?**

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

- 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 more than 70 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
  - Scored by reading all statute, regulation and board opinions in each state

State DHPPI Scores in 2001 and 2014

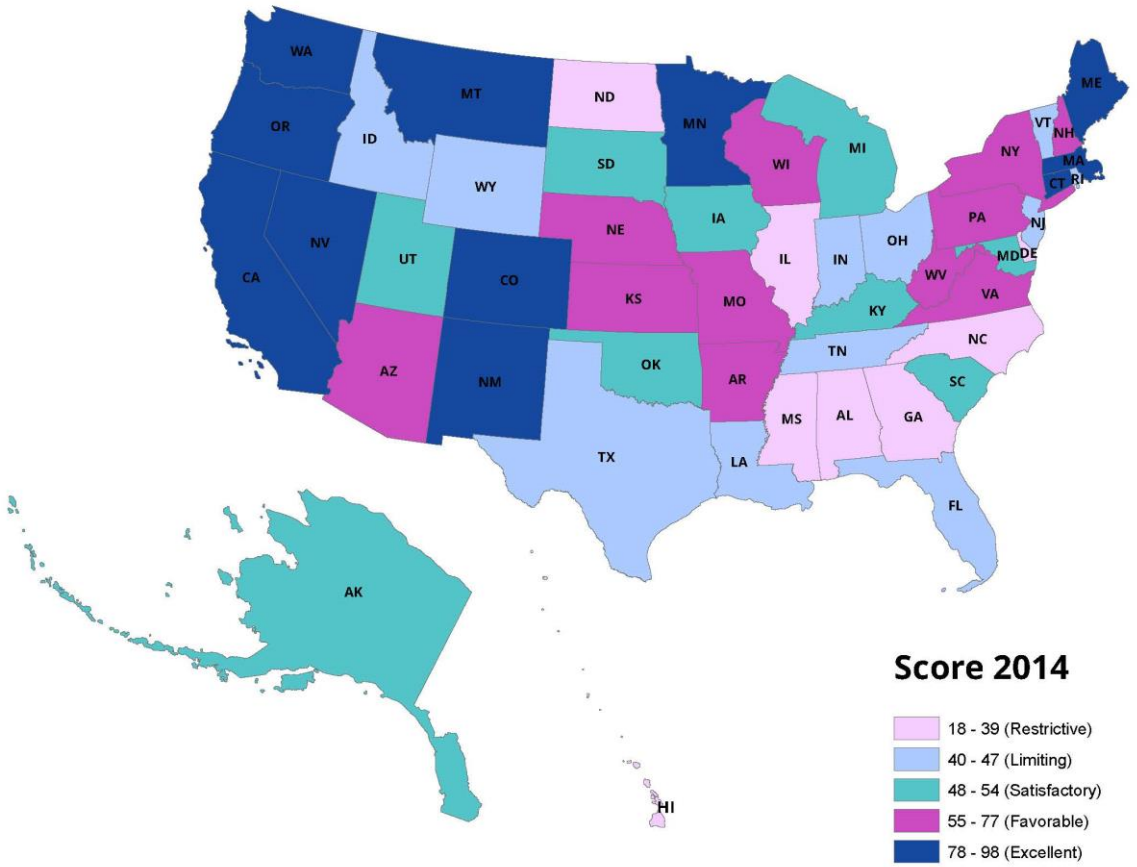
- Descriptive analysis
  2001 scores -10 in West Virginia, 97 in Colorado
  2014 scores -18 in Alabama and Mississippi, 98 in Maine.
  Mean score on the DHPPI 43.5 (2001)↑ 57.6 (2014)

- 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 an 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*)



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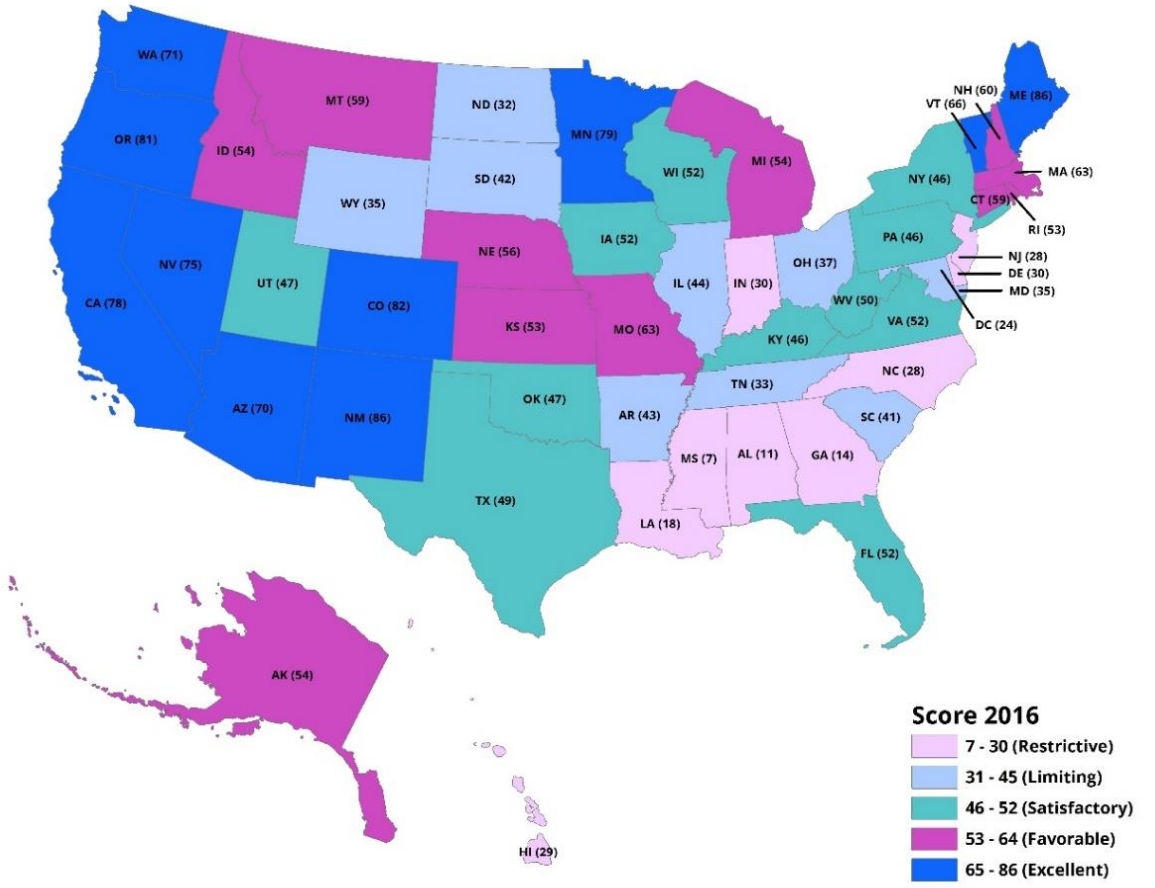
The 2016 DHPPI

- 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 and others were added
  - Fewer variables overall (approx.45)
  - 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



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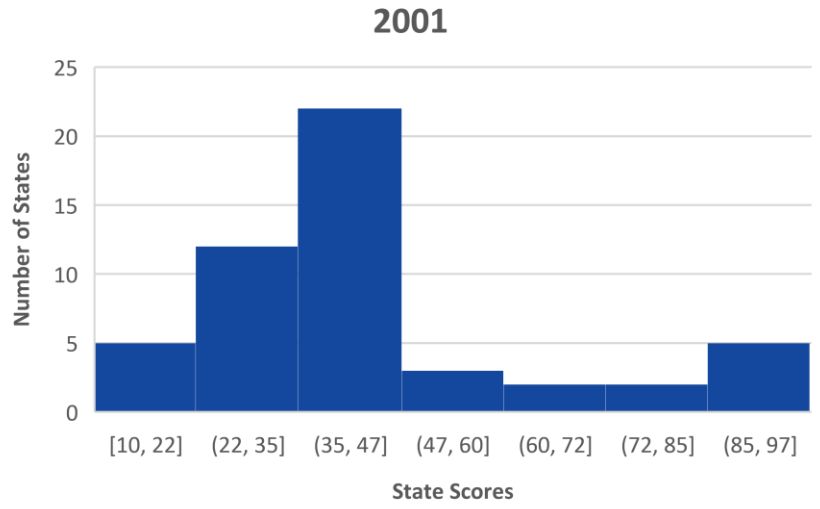
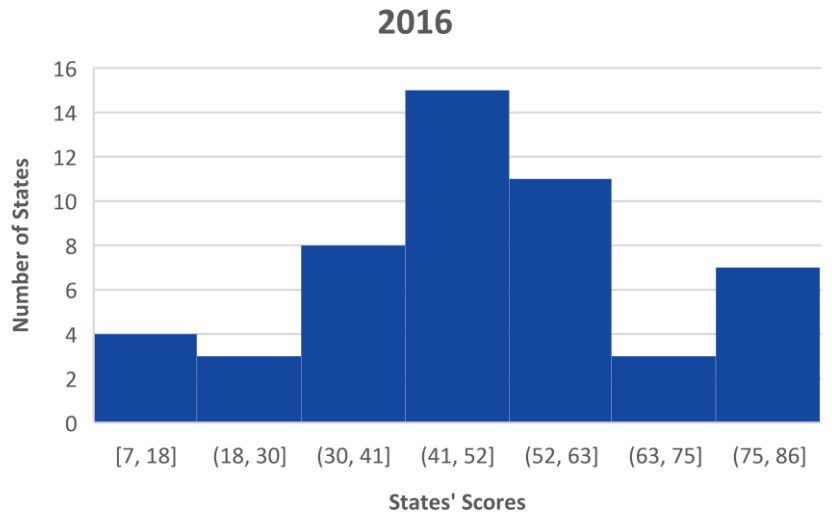
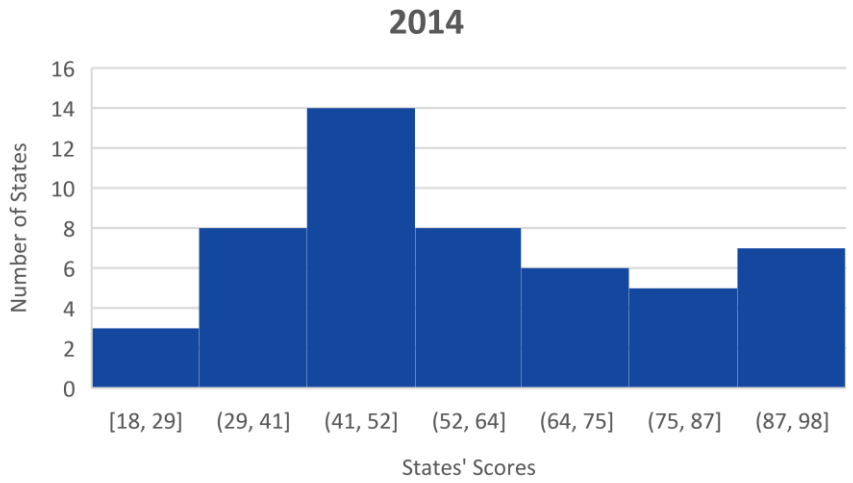
Changing Scope of Practice for Dental Hygienists – 2001, 2014, 2016







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)

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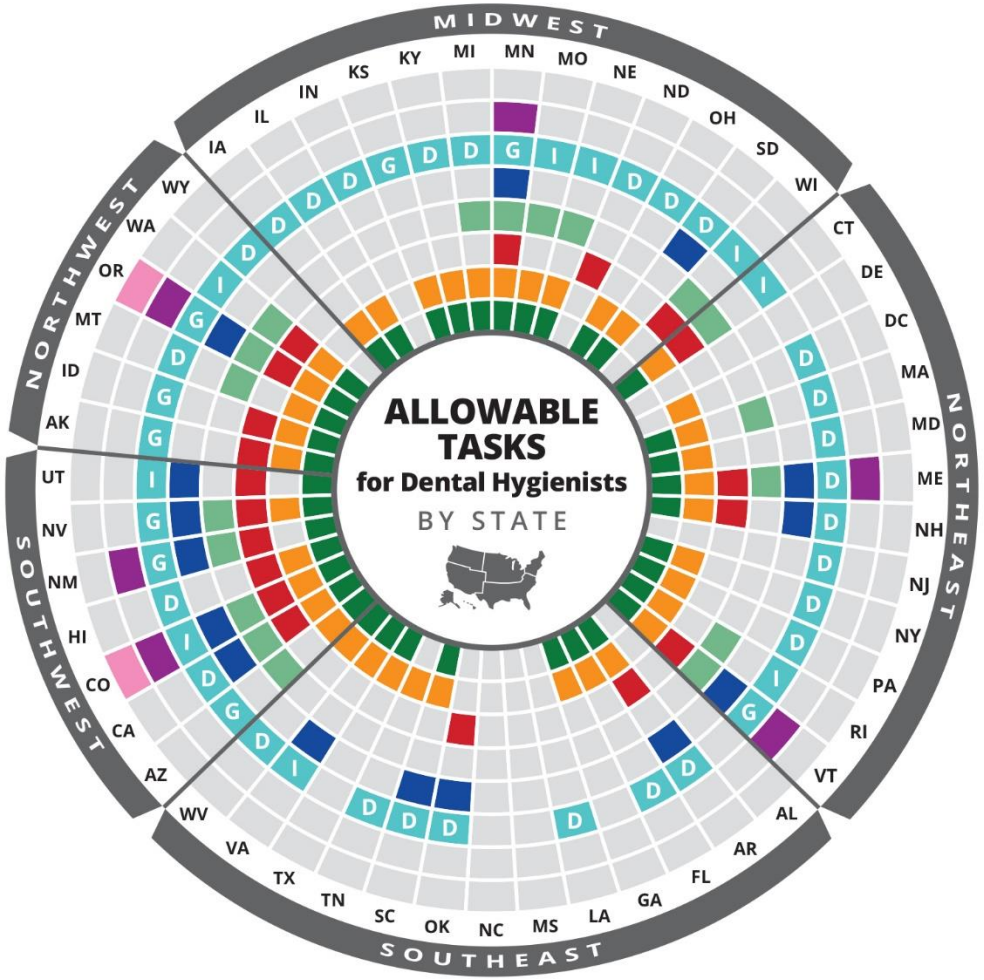
Developing a Dental Hygiene SOP Infographic: Why and How

- 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.[1,2]

- 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

This work was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS), under the Health Workforce Research Center Cooperative Agreement Program (U81HP27843). The content and conclusions presented herein are those of the authors and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

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Last Updated February 2017.

Are Physician Assistants More Likely To Provide Oral Health Services if They Have Been Educated in Oral Health Competencies?

Objective

To understand whether educating physician assistant students in oral health competencies impacts the likelihood of these professionals eventually providing oral health screening and assessment services in their clinical practices.

Study Sample

- The study sample consisted of 2,500 PAs of 6,100 graduates from a PA professional education program in 2014 (166 accredited programs).
- Database supplied by the American Academy of Physician Assistants.
- The number of PAs selected for inclusion in the sample from each education program was weighted by size (number of graduates from a program relative to the total number nationally).

Study Methods

Survey Instrument

- Survey was developed based on insights and suggestions provided by PA educators and researchers, as well as recent graduates of PA education programs during 12 pre-survey interviews..
- The final survey instrument consisted of 14 questions about:
  - Education and training in OH competencies,
  - Implementation of OH screening activities in clinical practice,
  - General inquiries into specialty, practice setting, and geography.

Survey Administration

- The survey was web-based (built on the Qualtrics platform) and was open for 3 months.
- Response rate was low (304; 12.6%); findings not generalizable but results were nevertheless interesting

Three Quarters of PAs Who Responded Received Some Instruction in Oral Health During Their PA Education Program

PAs Education in OH Competencies (n=294)

Sources of PAs' Education in OH	n	%
PA Education Program[a]	**219**	**74.5%**
Integrated into one or several curriculum topics	123	56.2%
Stand-alone lectures	116	53.0%
Inter-professional OH training	36	16.4%
Completion of an online curriculum	20	9.1%
Service learning activities	17	7.8%
Other Sources[a]	**58**	**19.7%**
Continuing education courses	13	22.4%
Self-study	13	22.4%
On-line education	8	13.8%
In-service training	6	10.3%
Professional conferences	6	10.3%

[a] n=46 PAs received OH education from both PA Education Program & other sources; n=63 reported no OH education.

PAs Who Were Educated in Oral Health Were Approximately 2.78 Times More Likely To Provide Oral Health Services in Practice

Associations Between Delivery of OH Services in Clinical Practice and PAs' Education in OH, Specialty, and Work Setting (n=292)

Predictor[a]	n	OR	95% CI	P-value
Education in OH Competencies				
No	14	1.00	*Reference*	
Yes	**91**	**2.78**	**1.38-5.59**	**0.0043**
Practice Specialty				
Other specialty[b]	24	1.00	*Reference*	
Primary medicine/urgent care[c]	**81**	**6.94**	**3.82-12.62**	**<0.0001**
Work Setting Type				
Inpatient	62	1.00	*Reference*	
Outpatient/office practice	43	0.65	0.36-1.15	0.14

[a] Odds Ratios (OR) and 95% Confidence Intervals (CI) adjusted for all other variables in the table.
[b] Surgical and sub-surgical specialties, anesthesiology, radiology, etc.
[C] Family medicine/general practice, internal medicine, pediatrics, obstetrics/gynecology, or emergency medicine/urgent care.

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Study Findings Supported the Importance of Training of PAs in Oral Health Competencies

- PA training in OH competencies during their education is important and may increase the likelihood of providing OH services.
- Continuing education would be an appropriate vehicle for instruction in OH. While online resources providing both didactic and clinical instruction in OH screening (eg, Smiles for Life) already exist, PAs may be unaware of their availability.
- Misperceptions within the medical community about the importance of OH screening persist, especially in medical and surgical specialties.
- *Lack of patient adherence to recommendations about OH* was cited as an important barrier. It is also a primary reason why provision of OH services in medical practice is important. PAs are well positioned to inform their patients about why OH matters.
- Despite general interest of policymakers, advocates, and stakeholders in integrating OH with medical services, numerous structural barriers within delivery systems impede integration.
- Ongoing education within the medical community and changes in reimbursement policies, medical record design, and referral networks will be needed to foster further adoption of OH screening by medical providers.

Thank You

Questions?

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