THE VIRGINIA BOARD OF HEALTH PROFESSIONS
THE VIRGINIA DEPARTMENT OF HEALTH PROFESSIONS

Review of Dental Hygienist Scope of Practice

DRAFT

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AUTHORITY

At the February 15, 2011 meeting of the Virginia Board of Health Professions, Secretary of Health and Human Resources William Hazel requested the Board's assistance in addressing Virginia's health reform issues. The Secretary's request followed the publication of Virginia Health Reform Initiative Advisory Council's (VHRI) findings and recommendations in December 2010. Governor Robert F. McDonnell commissioned VHRI to develop recommendations for implementing the Patient Protection and Affordable Care Act. VHRI identified updating scope of practice laws, including updating to reflect team-based practice and telehealth, as one means of increasing health care capacity.

Code of Virginia §54.1-2510 confers upon the Virginia Board of Health Professions certain powers and duties, including the following:

> *1. To evaluate the need for coordination among the health regulatory boards and their staffs and report its findings and recommendations to the Director and the boards;*
>
> *2. To evaluate all health care professions and occupations in the Commonwealth, including those regulated and those not regulated by other provisions of this title, to consider whether each such profession or occupation should be regulated and the degree of regulation to be imposed. Whenever the Board determines that the public interest requires that a health care profession or occupation which is not regulated by law should be regulated, the Board shall recommend to the General Assembly a regulatory system to establish the appropriate degree of regulation;*
>
> *7. To advise the Governor, the General Assembly and the Director on matters relating to the regulation or deregulation of health care professions and occupations;*
>
> *12. To examine scope of practice conflicts involving regulated and unregulated professions and advise the health regulatory boards and the General Assembly of the nature and degree of such conflicts;*

Pursuant to these powers and duties and the request of the Secretary of Health and Human Resources, the Board determined at its May 3, 2010 meeting to review the scope of practice of Nurse Practitioners, Pharmacists & Pharmacy Technicians, and Dental Hygienists. The review was delegated to the Board's Regulatory Research Committee (RRC). With reviews of Nurse Practitioners and Pharmacists & Pharmacy Technicians completed or subsumed by legislation, the RRC is now reviewing the scope of practice of dental hygienists.

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METHODS

Code of Virginia § 54.1-100 recognizes the right to engage in any lawful livelihood and thus places limits on the regulation of professions and occupations:

> *§ 54.1-100. Regulations of professions and occupations.*
>
> *The right of every person to engage in any lawful profession, trade or occupation of his choice is clearly protected by both the Constitution of the United States and the Constitution of the Commonwealth of Virginia. The Commonwealth cannot abridge such rights except as a reasonable exercise of its police powers when it is clearly found that such abridgment is necessary for the preservation of the health, safety and welfare of the public.*
>
> *No regulation shall be imposed upon any profession or occupation except for the exclusive purpose of protecting the public interest when:*
>
> *1. The unregulated practice of the profession or occupation can harm or endanger the health, safety or welfare of the public, and the potential for harm is recognizable and not remote or dependent upon tenuous argument;*
>
> *2. The practice of the profession or occupation has inherent qualities peculiar to it that distinguish it from ordinary work and labor;*
>
> *3. The practice of the profession or occupation requires specialized skill or training and the public needs, and will benefit by, assurances of initial and continuing professional and occupational ability; and*
>
> *4. The public is not effectively protected by other means.*
>
> *No regulation of a profession or occupation shall conflict with the Constitution of the United States, the Constitution of Virginia, the laws of the United States, or the laws of the Commonwealth of Virginia. Periodically and at least annually, all agencies regulating a profession or occupation shall review such regulations to ensure that no conflict exists.*

Pursuant to *Code of Virginia* § 54.1-100, the Board of Health Professions adopted seven criteria (next page; hereafter, the Criteria) to evaluate the need to regulate *new* professions in Virginia; however, they provide guidance for other regulatory reviews. For purposes of this review of a currently regulated profession, we are most interested in Criterion Seven—the least restrictive regulation consistent with public protection. We will examine this by reviewing other scope of practice and regulatory models of Dental Hygienists and related occupations in other states, and by examining pilot projects in Virginia, and examining whether these models are less restrictive, adequately protect the public, and/or lessen the economic impact of regulation, and whether they may be proper fits for Virginia.

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THE CRITERIA AND THEIR APPLICATION

The Board of Health Professions has adopted the following criteria and guidelines for their application for evaluating the need to regulate health professions. These criteria were initially adopted in 1991, and readopted in 1998. Additional information and background on the criteria are available in the Board of Health Professions Guidance Document 75-2 *Appropriate Criteria in Determining the Need for Regulation of Any Health Care Occupations or Professions, revised February 1998* available on the Board's website: http://www.dhp.virginia.gov/bhp/bhp_guidelines.htm

CRITERIA FOR EVALUATING THE NEED FOR REGULATION

CRITERION ONE: RISK FOR HARM TO THE CONSUMER

The unregulated practice of the health occupation will harm or endanger the public health, safety or welfare. The harm is recognizable and not remote or dependent on tenuous argument. The harm results from: (a) practices inherent in the occupation, (b) characteristics of the clients served, (c) the setting or supervisory arrangements for the delivery of health services, or (d) from any combination of these factors.

CRITERION TWO: SPECIALIZED SKILLS AND TRAINING

The practice of the health occupation requires specialized education and training, and the public needs to have benefits by assurance of initial and continuing occupational competence.

CRITERION THREE: AUTONOMOUS PRACTICE

The functions and responsibilities of the practitioner require independent judgment and the members of the occupational group practice autonomously.

CRITERION FOUR: SCOPE OF PRACTICE

The scope of practice is distinguishable from other licensed, certified and registered occupations, in spite of possible overlapping of professional duties, methods of examination, instrumentation, or therapeutic modalities.

CRITERION FIVE: ECONOMIC IMPACT

The economic costs to the public of regulating the occupational group are justified. These costs result from restriction of the supply of practitioner, and the cost of operation of regulatory boards and agencies.

CRITERION SIX: ALTERNATIVES TO REGULATION

There are no alternatives to State regulation of the occupation which adequately protect the public. Inspections and injunctions, disclosure requirements, and the strengthening of consumer protection laws and regulations are examples of methods of addressing the risk for public harm that do not require regulation of the occupation or profession.

CRITERION SEVEN: LEAST RESTRICTIVE REGULATION

When it is determined that the State regulation of the occupation or profession is necessary, the least restrictive level of occupational regulation consistent with public protection will be recommended to the Governor, the General Assembly and the Director of the Department of Health Professions

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OVERVIEW OF THE PROFESSION

HISTORY

The professionalization of dentistry began in the first half of the 19th century. The first publications of the American Journal of Dental Science appeared in 1839, followed quickly by the founding of the Baltimore College of Dental Surgery and the American Society of Dental Surgeons in 1840.[1] Early dentistry focused on treatment and remediation of dental disease.

By the turn of the 20th century, however, dentists understood that bacteria caused tooth decay. In 1906 Alfred Fones, DDS, of Bridgeport Connecticut, noting that most of his work revolved around extractions, trained his assistant, Irene Newman, to clean teeth in his practice.[2] By 1913 Dr. Fones & Ms. Newman had opened a dental hygiene school. Most of the early graduates were employed in local schools cleaning the teeth of school children.[3]

The Connecticut Dental Practice Act of 1915 included licensure of dental hygienists, resulting in the earliest regulation of dental hygienists and also linking dental hygiene practice to oversight by dentists. Dental hygiene developed rapidly as a profession. By the end of the next decade the national American Dental Hygiene Association (ADHA) was established and *the Journal of the American Dental Hygienists Association* began publication. By 1951, dental hygienists were licensed in every state in the United States.[4]

Dental hygiene programs are accredited by the Commission on Dental Accreditation (CODA), a part of the American Dental Association (ADA), which also accredits dental schools, advanced dental education programs, dental assisting programs and lab technology programs. The National Board Dental Hygiene Examination, which is accepted by all 50 states, is administered by the Joint Commission on National Dental Examinations (JCNDE). Both CODA and JCNDE have one representative each from the ADHA.[5]

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[1] American Dental Association. "History of Dentistry Timeline". *Archives of the American Dental Association*. http://www.ada.org/sections/educationAndCareers/pdfs/dental_history.pdf
[2] Marsh, Lynn. "Dental Hygiene in Progress" . *Dimensions of Dental Hygiene.* Centennial Celebration of Dental Hygiene 1913-2013. Pp 24-26, 28, 31. http://www.dimensionsofdentalhygiene.com/2013/100_Year/Features/Dental_Hygiene_in_Progress.aspx
[3] ADA, Ibid.
[4] Marsh, Ibid.
[5] See ADA Website, Commission on Dental Accreditation (http://www.ada.org/117.aspx) and JCNDE Website (http://www.ada.org/JCNDE.aspx).

THE DENTAL WORKFORCE IN VIRGINIA

The Virginia Board of Dentistry regulates three types of dental professionals: Dentists, Dental Hygienists and Dental Assistant II.[6] Dental Assistant I's are unregulated assistants to dentists. Although the practitioners work in teams and roles may overlap, dentists provide diagnosis and treatment of dental disease, dental hygienists focus on assessment, cleaning and patient education and dental assistants are chair side assistants to dentists. To work in Virginia (outside of special circumstances such as volunteering or public health protocols), dental hygienists must be employed[7] by a dentist or by a public health agency and may only work under the direction or general supervision of a dentist. Certain tasks, however, require direct supervision.[8] A general overview of the work performed by each profession appears to the right.

Dental Assistant I
• Work with patients to make them comfortable in the dental chair and to prepare them for treatments and procedures • Sterilize dental instruments • Prepare the work area for patient treatment by setting out instruments and materials • Help dentists by handing them instruments during procedures • Keep patients' mouths dry by using suction hoses and other equipment • Instruct patients in proper dental hygiene • Process x rays and complete lab tasks, under the direction of a dentist • Keep records of dental treatments • Schedule patient appointments • Work with patients on billing and payment
Dental Assistant II (Expanded Duties)
• Perform pulp capping procedures • Pack and carve amalgam restorations • Place and shape composite resin restorations • Take final impressions • Use of non-epinepherine retraction cord • Final cementaton of crowns and bridges
Dental Hygienists
• Remove tartar, stains, and plaque from teeth • Apply sealants and fluorides to help protect teeth • Take and develop dental x rays • Keep track of patient care and treatment plans • Teach patients oral hygiene techniques, such as how to brush and floss correctly
Dentists
• Remove decay from teeth and fill cavities • Repair cracked or fractured teeth and remove teeth • Straighten teeth to correct bite issues • Place sealants or whitening agents on teeth • Administer anesthetics to keep patients from feeling pain during procedures • Write prescriptions for antibiotics or other medications • Examine x rays of teeth, gums, the jaw, and nearby areas for problems • Make models and measurements for dental appliances, such as dentures, to fit patients • Teach patients about diet, flossing, use of fluoride, and other aspects of dental care

Source: 2014 US Bureau of Labor Statistics, Occupational Outlook Handbook. Except Dental Assistant II, which was summarized from 18VAC60-20-230.

A New Model: Dental Therapists

In 2009, Minnesota began licensing "Dental Therapists" and "Advanced Dental Therapists". These mid-level providers are educated at the Bachelor's and Master's level and may provide some "irreversible" care such as extractions, filing cavities, restorative work and development of a treatment plan. This model is controversial within the dental community.

[6] Special categories also exist for volunteers, teachers, temporary permits, and for performing select procedures or in certain circumstance.
[7] See Virginia Administrative Code 18VAC60-20-210(B). Dental Practices may be organized into certain Professional Corporations as permitted by statute and regulation.
[8] Board of Dentistry Regulations refer to "Indirect Supervision" and "Direct Supervision" to differentiate between supervision by a dentist supervising from within the facility or within the room. To avoid confusion we use the term "Direct Supervision" to refer to both categories. This allows for better comparisons across states and with the "General Supervision" model.

EDUCATION & CREDENTIALING

EDUCATION

The most common entry-level degree for dental hygienists is an associate degree. However, eight entry-level certificate programs are available and 53 programs offer entry-level bachelor's degrees (Bachelor of Science in Dental Hygiene, or BSDH).[9] The ADA's Commission on Dental Accreditation accredits entry-level programs. Accreditation standards for entry-level practice are the same for all entry-level programs.

Program Type	National	Virginia
Entry-Level Programs		
Certificate	8	0
Associate	287	4
Bachelor	53	2
Degree Completion Programs		
Dental Hygiene (BSDH)	44	1 (ODU)
Related (Health Science, Allied Health)	11	0
Masters Programs		
Dental Hygiene (MSDH)	17	1 (ODU)
Related (Health Science, Oral Health Care)	5	0

Although accreditation standards do not list a minimum number of hours, entry-level programs require an average of 2,910 hours of coursework, including 684 hours of supervised clinical instruction.[10] Accreditation standards do require a minimum of 12 hours of practice with patients per week during the final prelicensure year, and a minimum of six hours per week throughout the program. Additionally, graduates must have clinical experience with child, adolescent, adult, geriatric and special needs patients.[11]

In addition to entry-level programs, over 20 programs also offer masters degrees (MSDH). Additionally, the dental hygiene education community offers a large number of "degree completion" programs, including online programs, which allow certificate- and associate-trained dental hygienists to attain their bachelor's or master degrees. Bachelors and masters programs do not offer expanded clinical practice opportunities. Rather they provide dental hygienists with the knowledge and skills needed to fill education, research, public health, business and related administrative roles.

In Virginia, just over half of dental hygienists have associate's degrees, while 41 percent have a bachelor's degree. Only 3 percent list a certificate as their highest degree, and another 3 percent have attained a master's degree. Dental hygiene programs are distributed across the state (see map, next page). Bachelors degree programs are located in Richmond, at Virginia Commonwealth University, and in Norfolk, at Old Dominion University.[12] Old Dominion University offers the only bachelors completion program, which may be completed entirely online, as well as the only masters degree program in the state.[13]

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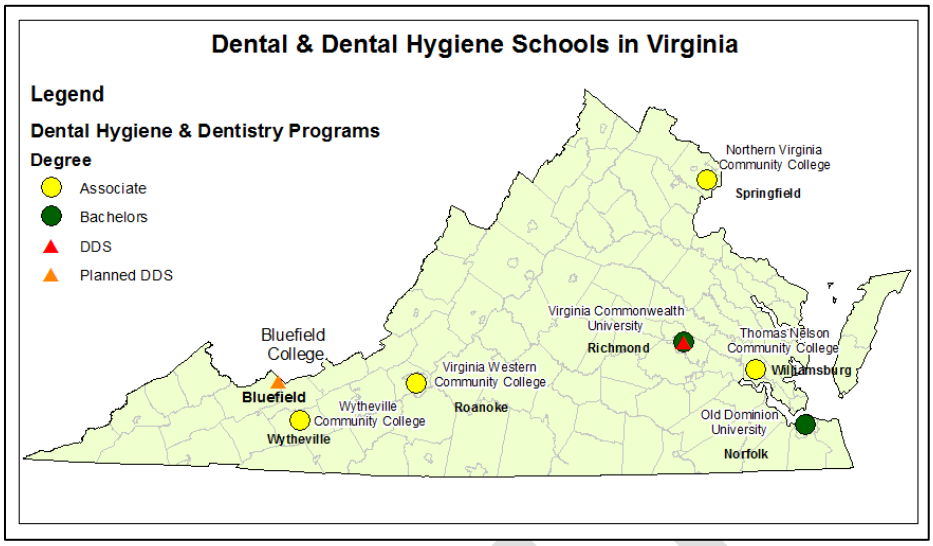
[9] American Dental Hygienists Association. Website. "Education & Careers: Dental Hygiene Programs". http://www.adha.org/dental-hygiene-programs.
[10] American Dental Hygienists Association, Division of Education. Oct. 7, 2013. "Dental Hygiene Education: Curricula, Program, Enrollment and Graduate Information." Fact Sheet. http://www.adha.org/resources-docs/72611_Dental_Hygiene_Education_Fact_Sheet.pdf
[11] Commission on Dental Accreditation. Eff. Jan. 1, 2013. *Accreditation Standards for Dental Hygiene Education Programs.* Chicago. Standards 2-14 through 2-16. http://www.ada.org/sections/educationAndCareers/pdfs/dh.pdf.
[12] American Dental Hygienists Association. Website. Ibid.
[13] Old Dominion University. *2013-2014 Catalog*. http://catalog.odu.edu/undergraduate/collegeofhealthsciences/dentalhygiene/



CREDENTIALING & LICENSURE

Graduates of accredited programs are eligible to sit for the National Board Dental Hygiene Examination (NBDHE) administered by the JCNDE. The NBHDE is recognized in every jurisdiction of the United States. There are multiple routes to eligibility for the NBDHE; however, virtually every state (including Virginia) also requires graduation from a CODA accredited program, precluding licensure for international graduates. Virtually every state also requires completion of one of several available regional clinical examinations.[14] Upon attaining licensure, dental hygienists attain the Registered Dental Hygienist credential (RDH). The one exception to this standard model for licensure is a preceptorship route in Alabama.[15]

Standard Routes to Licensure in Dental Hygiene	
Eligibility Type	Requirements
1. Dental Hygiene Student	• Certification of a CODA accredited program dean or director that all dental hygiene requirements have been met.
2. Graduate of an Accredited Program	• Copy of program diploma or copy of transcript with conferred degree.
3. Graduate of Non-Accredited Program (e.g.,international)	• Recommendation of dean or director of an accredited program, • Recommendation of the secretary of a US board of dentistry, • Completed coursework identical to an accredited program, and, • Evaluation of international credentials by Educational Credential Evaluators, Inc.
4. Dentistry Student	• Certification of a CODA accredited program dean or director that all dental hygiene requirements have been met.
5. Dentist	• Eligible for the National Board Dental Examination.

[14] American Dental Hygienists Association. Website. "Education & Careers: Licensure". http://www.adha.org/licensure
[15] Marsh, Ibid.

Dentist Oversight of Dental Hygiene Credentialing

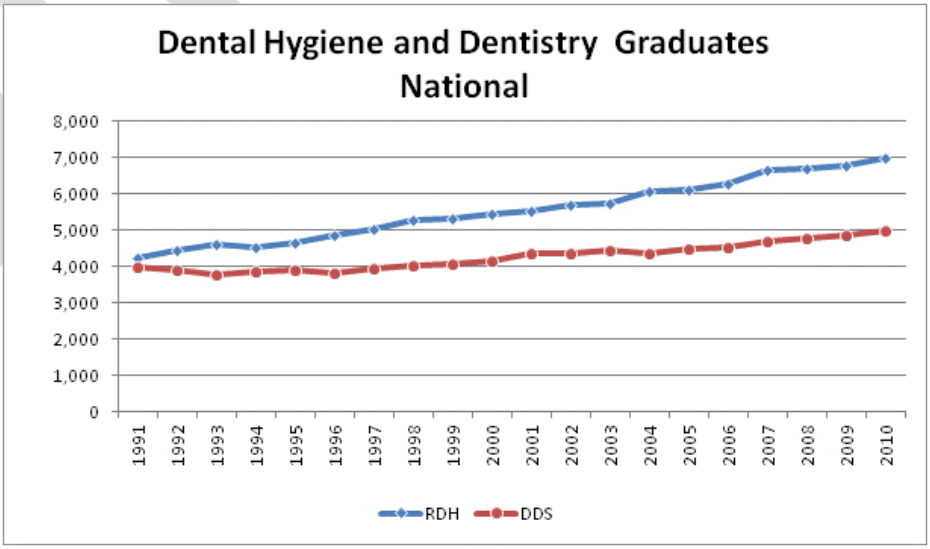
Dentists retain a strong oversight role in the credentialing of dental hygienists. Dental hygienists are licensed by state Boards of Dentistry or their equivalent in every state. The Commission on Dental Accreditation and the Joint Commission on National Dental Examinations are the same bodies that accredit dental programs and test dental students. Current membership counts by organization provide an indication of the level of oversight by dentists.

Organization	JCNDE Members	CODA Members
American Dental Hygienists' Association	***1***	***1***
American Dental Association	3	4
American Association of Dental Boards	6	4
American Dental Education Association	3	4
Postdoctoral General Dentistry	-	1
Recognized Dental Specialties	-	9
American Dental Assistants Association	-	1
National Association of Dental Laboratories	-	1
General Public	1	4
Students	1	1
Total	**15**	**30**

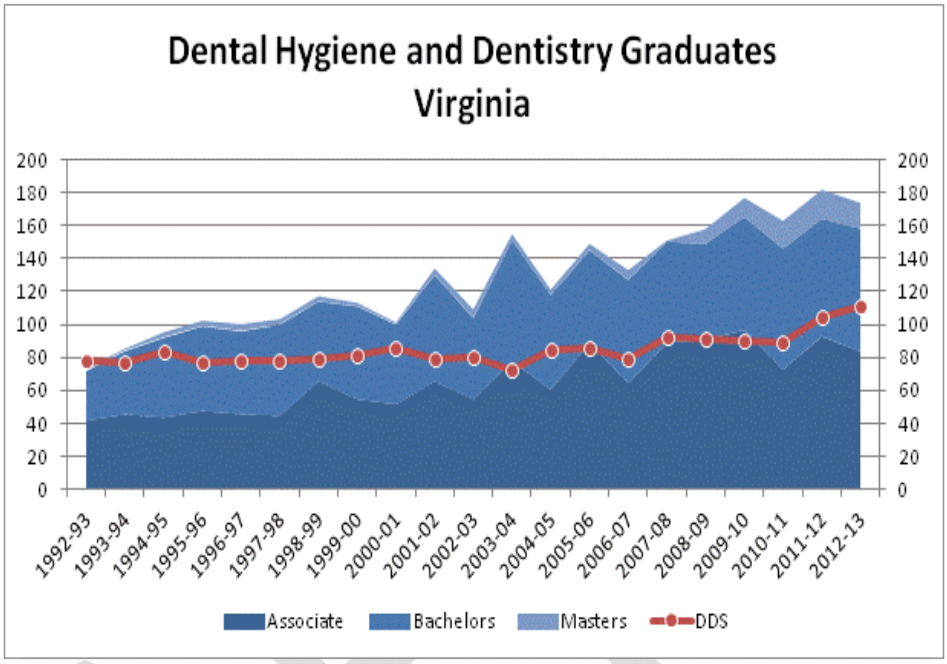
Source: CODA & JCNDE Websites. 2/10/2014.

BY THE NUMBERS

Nationally, 7,000 students graduated from dental hygiene programs in 2010. It is unknown how many of these graduated from entry-level programs. By comparison, there were just under 5,000 dental school graduates in the same year. The number of dental hygiene graduates has grown by 27% in the past ten years, and 66% in the past 20 years. Over the same periods, the number of dental graduates has grown 14% and 25% respectively.[16]



[16] Data from American Dental Hygienists Association, Division of Education. Ibid.



Virginia's dental hygiene and dental schools exhibit a similar pattern. The number of dental hygiene graduates for all program types was 174 in 2013. Virginia's one dental school awarded 111 degrees in 2013. However, the number of dental hygiene and dental degrees awarded has grown rapidly in Virginia. The number of dental hygiene degrees has grown by 60% over the past 10 years and by 105% over the past 20 years. The number of dental degrees has grown by 39% and 44% over the same periods.[17] Additionally, Bluefield College plans to open a new dental school, with an inaugural class size of 65, in 2016.[18]

Virginia Background	Dental Hygienists	Dentists
High School	56%	42%
Professional Education	62%	41%
EITHER	67%	49%

Over half of Virginia's dental hygienists completed high school in Virginia and almost two-thirds completed their initial dental hygienist degree in Virginia. Over two-thirds completed either high school or earned their dental hygienist degree in Virginia.[19] By comparison, just over 40 percent of Virginia's dentists completed dental school in Virginia, and just under half have a Virginia background.[20]

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[17] Data from State Council of Higher Education for Virginia. "SCHEV Research". Degrees Awarded, Series C01A2:Completion, Program Detail. Accessed 2/10/2014. http://research.schev.edu/Completions/C1Level2_Report.asp
[18] Bluefield College website. "School of Dental Medicine". http://www.bluefield.edu/school-of-dental-medicine-degree/. Accessed June 9, 2014.
[19] Virginia Healthcare Workforce Data Center. Dec. 2013. *Virginia's Dental Hygienist Workforce: 2013.* Pg. 8.
[20] Virginia Healthcare Workforce Data Center. Dec. 2013. *Virginia's Dentist Workforce: 2013.* Pg. 8.

SCOPE OF PRACTICE

VIRGINIA

With the exception of a public health protocol (see next section), dental hygienists must work under the general supervision of a dentist. *Code of Virginia* §54.1-2722(D) defines general supervision for the dental professions:

> *"For the purposes of this section, "general supervision" means that a dentist has evaluated the patient and prescribed authorized services to be provided by a dental hygienist; however, the dentist need not be present in the facility while the authorized services are being provided."*

Dentists may supervise up to four total dental hygienists or dental assistants II, who must be in their employ or the employ of a governmental agency, with some exceptions for free clinics, public health programs or services provided on a voluntary basis. Prescribed authorized services must be written, with a specific time limit not to exceed 10 months. If this time period lapses, the dentist must reevaluate the patient before reissuing orders. If the supervising dentist is not on site when services are performed, patients or their guardians must be informed. They must also be informed that no anesthesia can be administered (except topical, including subgingival, anesthesia) and that only authorized services may be performed. Regardless of his presence, the dentist assumes ultimate responsibility for delegated duties.[21]

The tasks dental hygienists may perform are typical for dental hygienists, including initial patient examinations, prophylactic cleanings, scaling and root planings, and use of topical Schedule VI medical agents, including topical anesthesia. Dental hygienists with the requisite training and evaluation (which is typical in accredited dental hygiene programs) may provide local anesthesia, nitrous oxide and perform x-rays or other radiographic assessments. However, these may only be performed when the dentist is present in the facility. On the other end of the spectrum, dental hygienists may provide public education and preventative screenings without supervision. All other tasks may be provided under general supervision.[22] The table on page 13 provides an overview of specific tasks.

VIRGINIA DEPARTMENT OF HEALTH PROTOCOL

In 2009, the General Assembly created a new level of supervision for the dental professions in Virginia: remote supervision. *Code of Virginia* §54.1-2722(D) defines remote supervision:

> *For the purposes of this section, "remote supervision" means that a public health dentist has regular, periodic communications with a public health dental hygienist regarding patient treatment, but such dentist may not have done an initial examination of the patients who are to be seen and treated by the dental hygienist and may not be present with the dental hygienist when dental hygiene services are being provided.*

[21] 18VAC60-20-210 et seq.
[22] Ibid.

This level of supervision was only available to dental hygienists employed by the Virginia Department of Health (VDH) working in select dentally underserved areas. Initially, this included only the Cumberland Plateau, Lenowisco and Southside Health districts. However, after three successful years the pilot program was expanded for use by VDH throughout the Commonwealth in 2012 (although not all districts employ hygienists). In fiscal year 2013, VDH brought all of its dental hygienists under the remote supervision protocol. Most of the VDH dental hygienists provide school-based services or services to infants and children in the Women, Infants and Children (WIC) program in 14 of Virginia's 35 local health districts, often using mobile clinics. According to their latest report, VDH "intends now to move from a 'pilot program' status to an ongoing commitment to prevention services. . ." as part of a plan to transition its ". . . dental services to a more preventive focused model utilizing dental hygienists."[23]

VDH dental hygienists working in remote supervision work under the *Protocol adopted by Virginia Department of Health (VDH) for Dental Hygienists to Practice in an Expanded Capacity under Remote Supervision by Public Health Dentists*, which is incorporated by reference into 18VAC60-20-220 (See Appendix A). The protocol requires a signed agreement, updated annually, with the dental hygienist. Dental hygienists participating in the program must have two years experience. Remote supervision by VDH dentists includes tracking locations of service delivery, reviews of daily reports and phone or personal communication at least every 14 days and an annual, on-site review. There is no limit to the number of dental hygienists a VDH dentist may supervise under the remote supervision protocol.

The protocol limits the tasks VDH dental hygienists may perform under remote supervision to educational and preventive services, including prophylactic cleaning, scaling with hand or ultrasonic instruments, applying topical fluoride and applying sealants. The protocol does not allow root planing, scaling with rotary instruments or anesthesia use, limiting the services they may provide.

VDH dental hygienists are required to refer patients without their own dentist to a dentist with the goal of establishing a dental home. If this is not achieved and the patient exhibits "conditions . . . which require evaluation for treatment" the dental hygienist must "make every practical or reasonable effort to schedule the patient with a [dentist]". Finding a dental home for patients is an important aspect of the protocol. In one WIC-related program, of 5,828 children screened in fiscal year 2013, 4,358 were referred to a dental home. In school-based programs 1,094 of 3,011 children screened were referred to a dentist for treatment.[24]

EXPANDED MODELS IN OTHER STATES

According to a recent report from the National Governors Association, 36 states allow direct access to dental hygienists for at least some preventative services, often in programs similar to Virginia's pilot program. Dental hygienists may be directly reimbursed by Medicaid in 15 states. Several states, however, go even further. Two states, Colorado and Maine, allow some dental hygienists to practice independently, including opening their own practices, without oversight of a dentist. In Maine, only experienced dental hygienists may do so (see pg.13), while

[23] Virginia Dept. of Health. 2014. *Report on Services Provided by Virginia Department of Health Dental Hygienists Pursuant to a "Remote Supervision" Practice Protocol 2013.* Report Document No. 30. Pg. 4. http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/RD302014/$file/RD30.pdf

[24] Virginia Board of Dentistry. Sept. 7, 2012. "Protocol Adopted by Virginia Department of Health (VDH) for Dental Hygienists to Practice in an Expanded Capacity Under Remote Supervision by Public Health Dentists". http://www.dhp.virginia.gov/dentistry/leg/VDH_Protocol.pdf

in Colorado any dental hygienist may practice independently. In California, bachelors trained dental hygienists may practice independently; however, they need a dentist of record for referrals and may only practice in certain facilities or in designated dental shortage areas. Other states, such as Massachusetts, allow experienced dental hygienists to practice in certain public settings such as schools, nursing homes, hospitals or community health clinics under collaborative practice arrangements with a dentist.[25] An overview of these programs, and of dental hygienist regulation in Virginia, appears on the next page. Note that the models discussed and presented here offer a sample of dental hygienist regulation. Regulation of dental hygienists varies widely throughout the United States, from independent access and reimbursement models (such as Colorado's) to more restrictive general or direct supervision[8] models. Appendix C provides a list from the American Dental Hygienists Association of states that allow some level of direct access, including Virginia's remote supervision model, along with brief descriptions of regulations.

By the Numbers

Notwithstanding the expansion of Virginia's Pilot Program, most of Virginia's dental hygienists work in private dental practices. Over 92 percent worked primarily in dental solo or group practices in 2013. Among dental hygienists who had a secondary location, 88 percent were in dental practices. Few dental hygienists worked in facilities such as hospitals, long-term care facilities, community clinics or K-12 schools, even as secondary locations.[26]

Primary Work Location	Dental Hygienist	Dentist
Solo Practice	53%	51%
Group Practice	39%	38%
Hospital	1%	3%
Public Health	1%	3%
Dental School	2%	2%
Community Clinic	1%	1%
Long-term Care	0%	0%
K-12 School	0%	0%
Other	3%	2%
	3,989	4,673

Secondary Work Location	Dental Hygienist	Dentist
Solo Practice	55%	31%
Group Practice	33%	45%
Hospital	0%	5%
Public Health	1%	2%
Dental School	4%	5%
Community Clinic	1%	5%
Long-term Care	0%	1%
K-12 School	0%	1%
Other	4%	5%
Location Count	1,031	1,165

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[25] National Governor's Association. Jan 6, 2014. *The Role of Dental Hygienists in Providing Access to Oral Health Care.* Washington D.C. http://www.nga.org/files/live/sites/NGA/files/pdf/2014/1401DentalHealthCare.pdf

[26] Virginia Healthcare Workforce Data Center. Dec. 2013. *Virginia's Dental Hygienist Workforce: 2013.* Pg. 14.

SELECT ALTERNATIVE PRACTICE ARRANGEMENTS: TABLE

	Virginia Dental Hygienist	Virginia Pilot Program	Colorado Dental Hygienist	Maine Independent Practice DH	California Registered DH in Alternative Practice	Massachusetts Public Health DH
Additional eligibility requirements	None	Two years experience	None	Assoc + 5,000 hrs exp BSDH + 2,000 hrs exp	Bachelor's degree	Three years full-time experience
Settings/Employers	Any	Public Health Agency	Any	Any	Dental shortage areas, Long term care, K-12 schools, Hospitals, Public Health	Long term care, K-12 schools, Hospitals Community Health Clinics
Tasks						
Local/inhalation anesthesia	DS[8]		DS			
X-rays, etc.	DS[8]		IA			
Polishing	GS		IA	IA		
Apply topical anesthetic agents	GS		IA	IA		RS
Scaling	GS	RS	IA	IA	IA	RS
Clinical Examination	GS	RS	IA	IA	IA	RS
Prophylaxis	GS	RS	IA	IA	IA	RS
Apply Sealants	GS	RS	IA	IA	IA	RS
Application of topical fluorides	GS	RS	IA	IA	IA	RS
Oral Health Education	IA	RS	IA	IA	IA	RS
Preliminary Screenings/assessment	IA	RS	IA	IA	IA	RS

Key: DS = Direct Supervision[8] **GS = General Supervision** **IA = Independent Access** **RS=Remote Supervision**

Sources:

All: National Governor's Association. Jan 6, 2014. *The Role of Dental Hygienists in Providing Access to Oral Health Care.* Washington D.C. http://www.nga.org/files/live/sites/NGA/files/pdf/2014/1401DentalHealthCare.pdf

Virginia: Virginia Dept. of Health. 2014. *Report on Services Provided by Virginia Department of Health Dental Hygienists Pursuant to a "Remote Supervision" Practice Protocol 2013.* Report Document No. 30. http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/RD302014/$file/RD30.pdf
Virginia Board of Dentistry. Sept. 7, 2012. "Protocol adopted by Virginia Department of Health (VDH) for Dental Hygienists to Practice in an Expanded Capacity under Remote supervision by Public Health Dentists". http://www.dhp.virginia.gov/dentistry/leg/VDH_Protocol.pdf
Code of Virginia. "Chapter 27 of Title 54.1 of the Code of Virginia: Dentistry". Accessed January, 2014.
Virginia Administrative Code. Feb. 12, 2014. "Regulations Governing Dental Practice". 18 VAC 60-20-10 et seq.

Colorado: *Colorado Revised Statutes* Eff. July 1, 2010. "Title 12: Professions and Occupations, Article 35: Dentists and Dental Hygienists".

Maine: Maine Board of Dental Examiners. Oct. 22, 2012. "Laws and Rules Relating to the Practice of Dentistry, Dental Hygiene, and Denturism: M.R.S.A. Title 32, Chapter 16 and Rules of the Board of Dental Examiners." Augusta, Maine. http://www.mainedental.org/forms/DentalPracticeAct.pdf

California: California Business and Professions Code Sections 1900 -1966.6. http://www.dhcc.ca.gov/consumers/duties_rdhap.shtml Accessed Feb. 2014.

Massachusetts: *Code of Massachusetts Regulations*. 234 CMR 5.00. Requirements for the Practice of Dentistry and Dental Hygiene. Massachusetts Trial Court Libraries. http://www.lawlib.state.ma.us/source/mass/cmr/234cmr.html. Accessed Feb. 2014.

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ECONOMIC IMPACT

OVERVIEW

According to the Centers for Disease Control, most oral health problems are preventable with proper fluoridation, prophylactic cleaning, and treatments such as the application of dental sealants. Additionally, oral infections and periodontal disease have been linked to other health problems including diabetes and heart disease. Despite this, more than a quarter of US children age 2 to 5 suffer from tooth decay. The proportion increases as children get older, with half of those age 12-15 years suffering from tooth decay. The proportions are higher among some racial and ethnic groups and among those from lower income brackets.[27] Nearly half of adults over age 30 have some form of gum disease.[28]

In the American insurance market, dental insurance has been effectively decoupled from health insurance in both public and private insurance markets. Few private health insurance plans include dental coverage, and only 57 percent of full-time private workers had employer-sponsored dental insurance. Although some Medicare Advantage plans offer dental benefits, standard Medicare does not. Medicaid and Children's Health Insurance Programs provide dental benefits for children, but usually not for adults. Similarly, dental benefits are mandated for children under the Affordable Care Act, but not for adults, and health insurers on Health Benefits Exchanges are only required to provide dental benefits for children.[29] As a result, up to 47 percent of Americans lack dental insurance according to the National Association of Dental Plans.[30]

Virginia, through its *Smiles for Children* Dental Program, has successfully increased the proportion of Medicaid & CHIP enrollees aged 2 -21 visiting a dentist each year. In 2012, 62% of these enrollees visited a dentist compared to the national average of 49%. This promises to have a long term impact on oral health in the state.[31] Nevertheless, the Virginia Health Care Foundation estimates that 3.8 million Virginians lack dental insurance.[32]

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[27] Centers for Disease Control and Prevention. 2011. "Oral Health: Preventing Cavities, Gum Disease, Tooth Loss and Oral Cancers, At a Glance 2011." http://www.cdc.gov/chronicdisease/resources/publications/aag/pdf/2011/oral-health-aag-pdf-508.pdf.

[28] American Dental Association. *Action for Dental Health.* "Year One: 2014, A Report to Congress". http://www.ada.org/en/public-programs/action-for-dental-health/report-to-congress.

[29] Hoyle, Jaime. Oct. 22, 2013. "Study on the Cost of Untreated Dental Disease on the Commonwealth (SJR 50 – Senator Barker)". Presentation to the Joint Commission on Health Care. Richmond, Va. http://jchc.virginia.gov/4.%20Untreated%20Dental%20Disease2.pdf.

[30] Van Marke, Tracey. Fall 2013. "Virginia's Dental Safety Net: Striving to Meet the Needs of the Uninsured and Underserved". Virginia Dental Journal & Virginia Health Care Foundation. http://www.vhcf.org/wp-content/uploads/2010/09/VDA-Journal-Reprint.pdf.

[31] Department of Medical Assistance Services. Dec. 2013. *Smiles for Children Improving Dental Care Across Virginia.* Annual Report to the General Assembly. 2014 RD56. http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/RD562014/$file/RD56.pdf

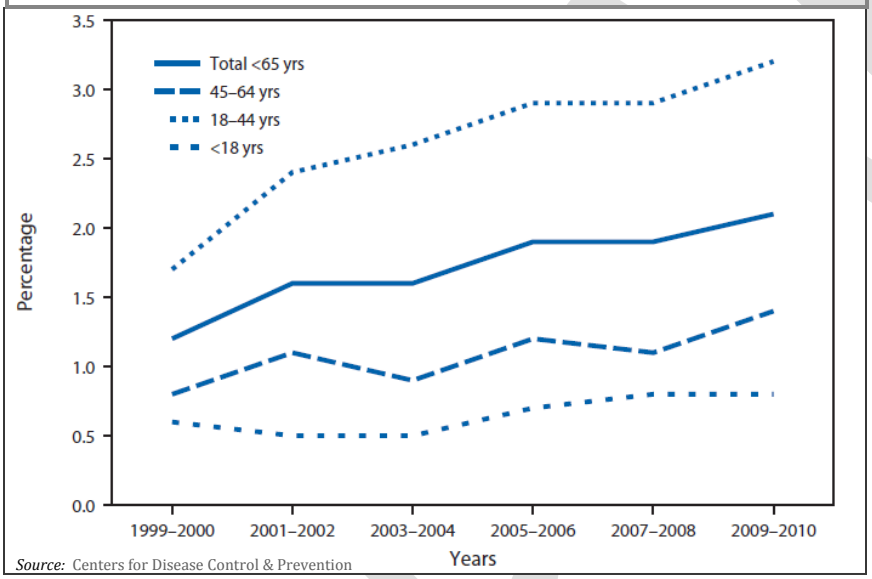
[32] Virginia Health Care Foundation. "Dental Statistics and Research". http://www.vhcf.org/data/statistics-and-research-on-dental-access/. Accessed Feb. 2014.

EMERGENCY DEPARTMENT USE

> *"The fact that so many people are turning to hospitals to address oral health needs is another sign that the U.S. dental system is failing to reach many who need care."*
>
> *--The Pew Center on the States*

Despite high amounts of dental disease, the American Dental Association estimates that more than 181 million Americans will not visit a dentist in 2014. By contrast, 2.1 million Americans visited emergency rooms for dental pain in 2010. Nearly 80 percent of these visits were for preventable conditions.[33] Another study published in the Journal of the American Dental Association found that between 2008 and 2010, more than four million Americans who visited a hospital-based emergency department (ED) received a diagnosis for dental conditions. This represents about one percent of emergency department visits.[34] The Centers for Disease Control and Prevention reports that 2.1% of ED visits by those under age 65 are for dental-related problems, including 3.2% of ED visits by those age 18-44. Moreover, the proportion is increasing. Both the number of dental-related ED visits and the proportion of ED visits that are dental related doubled between 2000 and 2010.[35] Another study, examining all age groups, found that the percentage of all ED visits that were related to dental problems increased from 1.06% to 1.65% over the same period.[36]

Proportion of Emergency Department visits that were dental related, US.



Source: Centers for Disease Control & Prevention

These visits result in direct costs to states. A study by the Agency for Healthcare Research and Quality's Healthcare Cost and Utilization Project found that 30% of dental-related ED visits were made by those covered by Medicaid, including 27% of those that resulted in admission. Another 40% were made by the uninsured, including 41% of those that resulted in admission.[37] Estimates of costs vary, with one study placing costs at $760 per visit and another

[33] American Dental Association. *Action for Dental Health.* "Year One: 2014, A Report to Congress". http://www.ada.org/en/public-programs/action-for-dental-health/report-to-congress.
[34] Allareddy, Rampa, Lee, Allareddy & Nalliah. April 1, 2014. "Hospital-based Emergency Department Visits Involving Dental Conditions: Profile and Predictors of Poor Outcomes and Resource Utilization." *The Journal of the American Dental Association.* Issue 145, pp 331-337. Per visit cost is in 2010 dollars.
[35] See American Dental Association. *Action for Dental Health.* "Year One: 2014, A Report to Congress". http://www.ada.org/en/public-programs/action-for-dental-health/report-to-congress and Centers for Disease Control and Prevention. Sept. 27, 2013. "Quickstats: Percentage of Emergency Department (ED) Visits That Were Dental-Related". *Morbidity and Mortality Weekly Report*. Vol. 63, Iss. 83, pg. 803.
[36] Wall & Nasseh. May 2013. "Dental-Related Emergency Department Visits on the Increase in the United States." *Research Brief.* Health Policy Institute, American Dental Association. Also see the source in note 34, which found a 16% increase in the number of dental related ED visits between 2006 and 2009.
[37] Seu, Hall & Moy. November 2012. "Statistical Brief #143: Emergency Department Visits for Dental-Related Conditions, 2009." Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project. http://www.hcup-us.ahrq.gov/reports/statbriefs/sb143.pdf

at $1,000 per visit.[31,38] These can add up to significant costs. According to research by the Pew Center for the States, dental-related hospital visits resulted in $88 million in charges in Florida (2010), $23 million in Georgia (2007), $7 million in Wisconsin (2009), $5 million in Iowa (2007) and $4 million in Nevada (2005). Charges for children alone reached $31 million in New York (2008).[36] Comparable visits to dental offices can cost as low as $50-$100.[36] However, the ADA estimates 80% of these visits are preventable through fluoridation, hygiene and other preventative/routine care.[31]

Although Virginia-specific estimates for Virginia are not readily available, data obtained from five Virginia hospitals by the Joint Commission on Health Care found that "the proportion of emergency department visits that are dental related mirrors the national average of 1-2%." A survey distributed to individuals seeking care at a Missions of Mercy dental clinic in Grundy, Virginia in early October, 2014 found that 16% had visited an emergency room for dental-related care at some point in the past, including 12.2% in the prior three years and 9.7% within the prior year.[39]

Access to Dental Care

Limited access to dentists and other dental health providers in some areas and settings is an oft-discussed issue in oral health. Indeed, an analysis by AHRQ's Healthcare Cost and Utilization Project found that per capita, dental-related ED visits more than doubled in areas with poor access to dentists and in rural areas. They more than quintupled in the lowest income areas (see chart).[35] Access to dental-care is also a concern for persons in nursing facilities, hospitals and other institutions.

Dental-related visits to the ED, US, 2009, per 100,000 Population

Ratio of patients to dentists	Total ED visits	Treat-and-release ED visits	Hospital admissions from the ED
<1,500:1 (desirable)	216	212	4.2
1,500-2,000	326	321	5.3
2,000-3,000	336	333	2.9
3,000-4,000 (poor)	447	443	3.6
>4,000:1 (HPSA)	382	379	3.1
Patient Residence			
Large Metropolitan	217	213	3.9
Small Metropolitan	369	365	4.7
Micropolitan	478	474	4.9
Rural	480	476	4.3
Community Income Level			
Highest	111	109	2.2
Moderate	238	235	3.3
Low	387	381	5.8
Lowest	452	448	4.7

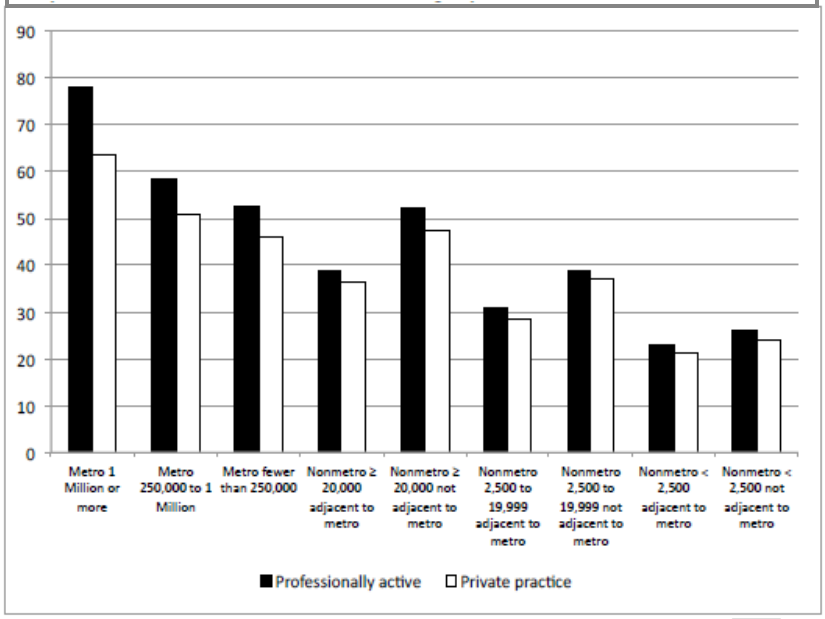
Source: AHRQ Healthcare Cost and Utilization Project.

Access in Rural Areas

While there is some debate about whether an overall shortage of dentists exists, maldistribution of dentists and other dental providers is a common and growing refrain. Nationally, the number of areas designated as Dental Health Professional Shortage Areas (dHPSA) more than doubled from 1,853 to 4,661 between December 2001 and July 2011. The population in dHPSAs grew from 38.5 million to 52 million.[40] A Weldon Cooper Study

[38] Pew Children's Dental Campaign. February 2012. "A Costly Dental Destination: Hospital Care Means States Pay Dearly". Issue Brief. The Pew Center on the States. For statewide charges, years were 2010, 2007, 2009, 2007, 2005.
[39] Chesser, Michelle. Oct. 8, 2014. "Dental Safety Net Capacity and Opportunities for Improving Oral Health". Presentation to the Joint Commission on Health Care, Virginia General Assembly. http://jchc.virginia.gov/3%20Adult%20Oral%20Health%20Pres%20final.pdf
[40] Rephann & Wanchek. March 24, 2011. "Filling the Gaps, Dentist Disparities along the Rural-Urban Continuum". Center for Economic and Policy Studies, Weldon Cooper Center. Paper presented at the 51st Annual Conference of the Southern Regional Science Association, Charlotte NC, Mar. 22-25, 2012. http://www.coopercenter.org/sites/default/files/dentist_final.pdf

Dentists per 100,000 Population by Rural-Urban Continuum Category, 2007, National.



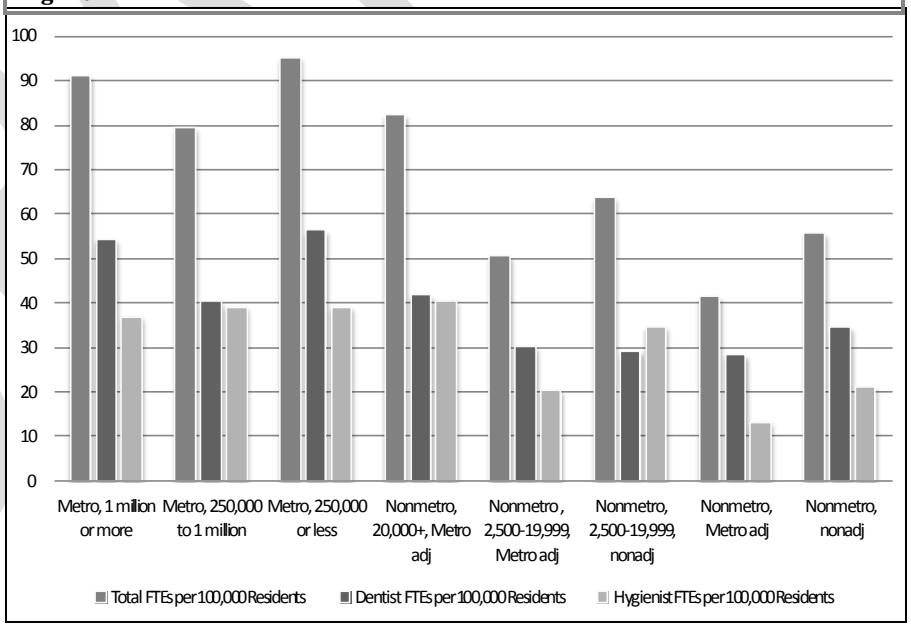
Source: Rephann & Wanchek, Weldon Cooper Center

found wide disparities nationally in dentist-to-population ratios between rural and urban areas (see graph). The largest metro areas had three times as many dentists per capita than the most rural counties nationally. Moreover, the disparity worsened between 1998 and 2007. The authors note "[t]hese disparities are likely to grow worse before they grow better".[37]

Although the Weldon Cooper Center study did not examine rural-urban disparities in Virginia or dental hygienists, we used data from the Virginia Healthcare Workforce Data Center to examine the same concept for dentists and dental hygienists in Virginia. Note that HWDC data uses full-time equivalency units (FTEs, a measure of hours worked) rather than counts, and pertain to different years.

The distribution of dentist FTEs along the rural-urban continuum in Virginia reflects the national disparities seen in the Weldon Cooper Study, although muted compared to that study. Additionally, hygienists exhibit a similar pattern to dentists. This is expected due to the *statutory and* regulatory limits on hygienist practice.

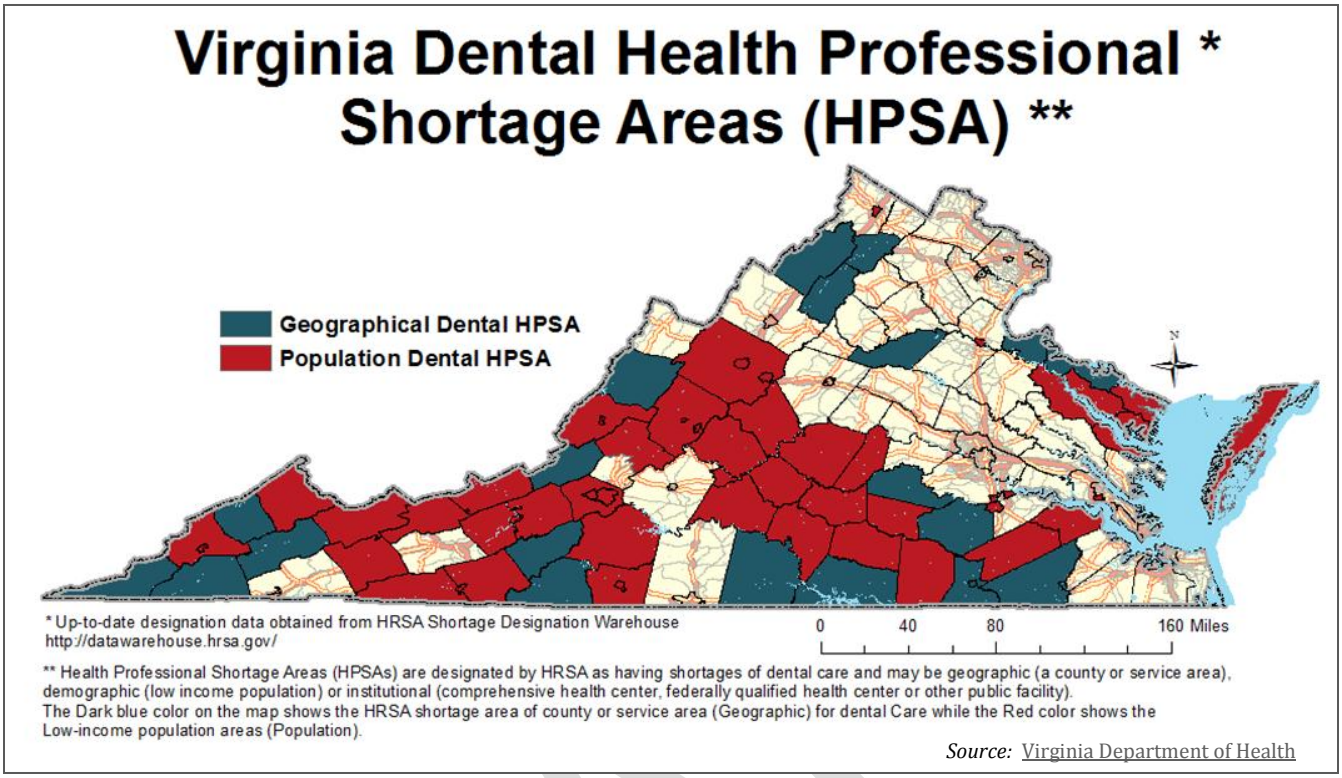
FTEs per 100,000 Population by Rural-Urban Continuum Category, 2013, Virginia.



Source: HWDC Analysis of 2013 Dentist and Dental Hygienist Workforce Survey Results. 2012 population estimates are from the Weldon Cooper Center.

Other evidence also supports the idea that rural areas in Virginia face a shortage of dentists. As defined by HRSA, a dHPSA is an area or population with more than 5,000 people per dentist. Virginia has 83 geographic or population dHPSAs, with only 47 percent of the need for dentists met. Another 143 dentists, precisely distributed, are needed to fill these local gaps.[41] dHPSAs are largely distributed in Virginia's rural areas rather than Virginia's larger urban areas (see map, next page).

[41] Kaiser Family Foundation. 2014. "Dental Care Health Professional Shortage Areas (HPSAs)". *State Health Facts.* http://kff.org/other/state-indicator/dental-care-health-professional-shortage-areas-hpsas/



Source: Virginia Department of Health

THE DENTAL SAFETY NET

According to a recent article by Tracey Van Marcke, Dental Opportunities Champion of the Virginia Health Care Foundation (VHCF), "access to dental care has become the top priority in many local community needs assessments."[42] The VDH's Dental Health Program, whose 27 full- and part-time dentists served 17 of 35 Local Health Districts in 2012, is in a period of transition.[43] A "Dental Transition Plan" submitted to the General Assembly by VDH envisions phasing out VDH funded dental clinics in favor of the preventative services model implemented in the Remote Supervision Pilot Project. VDH dental clinics will be phased out, with their funding transferred to nine dental hygienist teams and one supervising public health dentist. VDH will maintain three clinics deemed "critical" in Mt. Rogers, Norfolk and Western Tidewater health districts through 2015, but these will be phased out as well. Importantly, two other clinics in Cumberland Plateau and Lenowisco health districts deemed critical were deemed "not viable due to recruitment challenges".

Provider	Per Sealant	Ave. Per Child (3.6 Sealants)
VDH Remote Supervision Pilot	$19.26	$69.35
VDH General Supervision	$24.10	$86.76
Medicaid/FAMIS fee schedule	$32.28	$116.21
ADA Fee Schedule	$46.00	$165.60

Source: VDH Oral Health Plan, pg. 10 and Dept. of Medical Assistant Services.

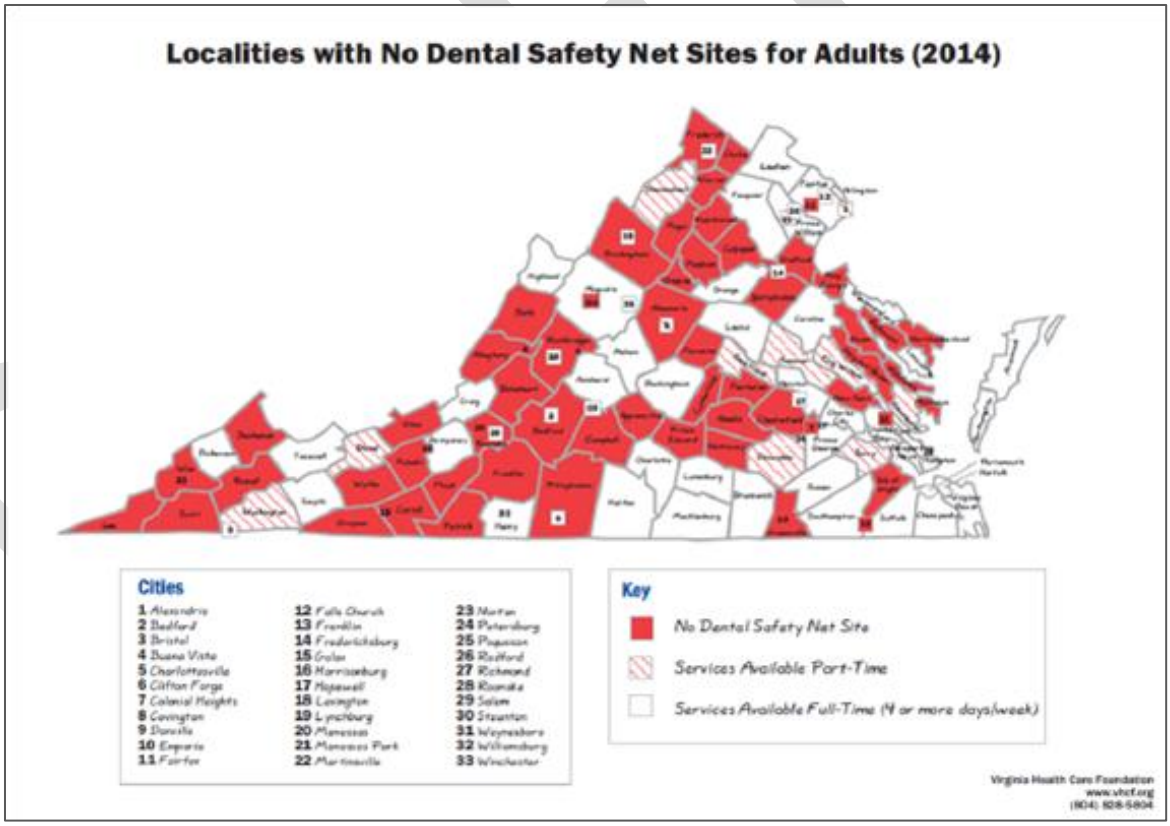
[42] Van Marcke. Fall 2013. "Virginia's Dental Safety Net: Striving to Meet the Needs of the Uninsured and Underserved". *Virginia Dental Journal*. October, November & December 2013. pp 29. Available on the Virginia Healthcare Foundation Website: http://www.vhcf.org/wp-content/uploads/2010/09/VDA-Journal-Reprint.pdf
[43] Virginia Department of Health. October 2012. *Virginia Department of Health Oral Health Plan: A Report to the General Assembly*.

Under this new plan, responsibility for treatment of underserved populations will fall to Community Health Centers and Free Clinics, or to private (particularly Medicaid/FAMIS) providers. Cost seems to be a significant driver. VDH predicts costs per hygienist team to be $109,000, including salaries, benefits, assistants and equipment, but excluding the cost of oversight.[44] Salaries alone (excluding benefits) for VDH dentists range from $91,000 to $125,000.[45] Costs per treatment are also significantly less. For instance, costs for sealants are about 20% less when applied using the remote supervision model (see table, page 18).

Under this new plan, responsibility for treatment of underserved populations will fall to Community Health Centers and Free Clinics, or to private (particularly Medicaid/FAMIS) providers. The VHCF notes that 67 of Virginia's counties and independent cities have no dental safety net provider, while many of the 68 localities that do only offer dental safety net service part-time.[46] The VDH plan noted:

"During the 2013 stakeholder meetings, multiple participants expressed both their desire for and the value of extending remote supervision capability to other institutions serving challenged populations. This may include Community Health Centers, charitable safety net facilities [Free Clinics], *hospitals and nursing homes."*[41]

A recent study by the Joint Legislative Audit and Review Commission (JLARC) noted that out of the nine medical services it examined dental care services were among the most difficult to access by Medicaid enrollees. Only about a third of Virginia's licensed dentists participate in Medicaid. Just over half of Medicaid enrolled children accessed dental care in 2012, while 80% of children in the general population did so. Rates of access were consistent across the state.[47] Many of those who do access care use safety net providers.



[44] Virginia Department of Health. Oct 2013. *Virginia Department of Health Dental Transition Plan: A Report to the General Assembly.*
[45] BHP analysis of Richmond Times-Dispatch Data. *Salaries of Virginia State Employees 2012-2013.* http://datacenter.timesdispatch.com/databases/salaries-virginia-state-employees-2012/
[46] Virginia Health Care Foundation. "Dental Statistics and Research". Website. http://www.vhcf.org/data/statistics-and-research-on-dental-access/. Accessed 3/6/2014.
[47] Joint Legislative Audit and Review Commission. Nov. 2013. *Review of the Impact of Medicaid Rates on Access to Health Care in Virginia.* Senate Document No. 8. http://jlarc.virginia.gov/reports/Rpt448.pdf.

Access in Nursing and Other Health Facilities

Maintaining oral health in nursing facilities can be challenging. Many residents of nursing facilities cannot perform daily oral hygiene, so facility staff perform these activities instead. Patients with dementia or other cognitive disabilities may resist care, resulting in inadequate care, or oral hygiene being skipped entirely. Although assessments of oral health in nursing homes have not been carried out in Virginia or nationally, several states have carried out such assessments. An observational study of five New York nursing facilities found that only 16% of residents received any daily oral care. Care that was delivered was substandard in every instance.[48] A Kansas study found that 53% of nursing facility residents had not seen a dentist in the past year, while 31% had not seen a dentist in three years. About 34% had untreated tooth decay, while almost a quarter had an active condition requiring "professional attention".[49] A 2003 survey of Ohio long-term care facilities found that more than half of executive directors rated resident's oral health as fair or poor.[50] In Wisconsin, a study of 24 nursing homes found that 35% had substantial oral debris.[51] While oral health is primarily the responsibility of facility staff and nurses, this is an area where the educational and prophylactic services of dental hygienists could improve care.

Regulation and the Dental Professions

Scholarly attention to professional regulation has been increasing over the past decade. For a variety of reasons much of that attention has been focused on the dental professions. One of the criticisms of state regulation of professions is that educational accreditation and credential examinations are often national in scope. This fact sometimes undercuts the rationale for wide differences in state scope of practice laws. Dental hygienists, whose scope of practice runs the gamut from independent practice through direct supervision[8] in a dental office, seem to exemplify this criticism. The wide variation in scope also makes the profession conducive to study.[52]

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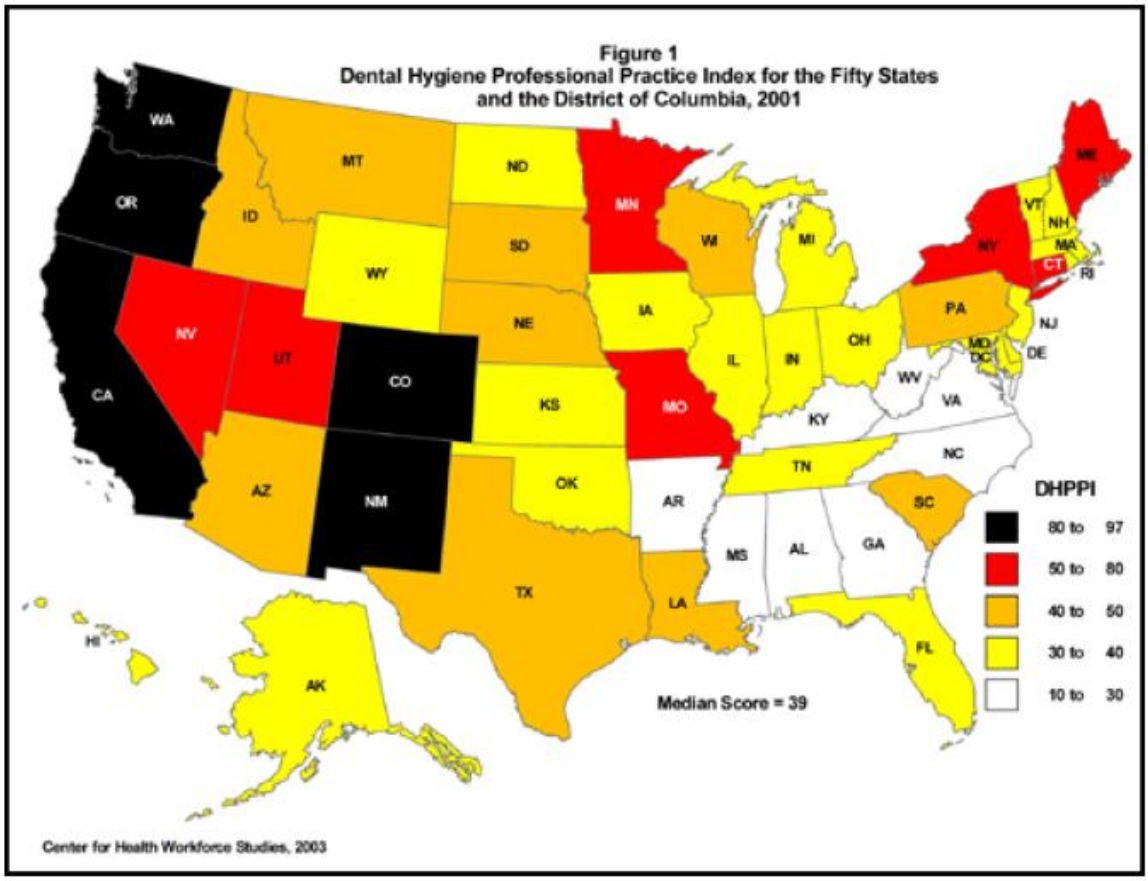
[48] Coleman & Watson. Jan. 2006. "Oral Care Provided by Certified Nursing Assistants in Nursing Homes." *Journal of the American Geriatrics Society.* Vol. 54, No. 1. pp. 138-145. http://www.dhs.wisconsin.gov/rl_dsl/training/OrlCrhndout.pdf
[49] Kansas Bureau of Oral Health. 2012. *Elder Smiles 2012: A Survey of the Oral Health of Kansas Seniors Living in Nursing Facilities.* http://www.kdheks.gov/ohi/download/2012_Elder_Smiles_Report.pdf
[50] Pyle, Jasinevicius, Sawyer & Madsen. Mar-Apr 2005. "Nursing Home Executive Director's Perception of Oral Care in Long-term Care Facilities. *Special Care in Dentistry.* Vol. 25, Iss. 2. pp 111-117.
[51] Saint-Louis, Catherine. Aug. 4, 2013. "In Nursing Homes, an Epidemic of Poor Dental Hygiene". *The New York Times*. http://well.blogs.nytimes.com/2013/08/04/in-nursing-homes-an-epidemic-of-poor-dental-hygiene/?_php=true&_type=blogs&_r=0
[52] For a good overview of studies see reviews in Kliener & Kurdle. 1997. "Does Regulation Improve Outputs and Increase Prices? The Case of Dentistry." *NBER Working Paper No. 5869.* and Marier & Wing. 2014. "Effects of Occupational Regulations on the Cost of Dental Services: Evidence from Dental Insurance Claims." *Journal of Health Economics.* Vol. 34.

VIRGINIA'S REGULATIONS IN CONTEXT

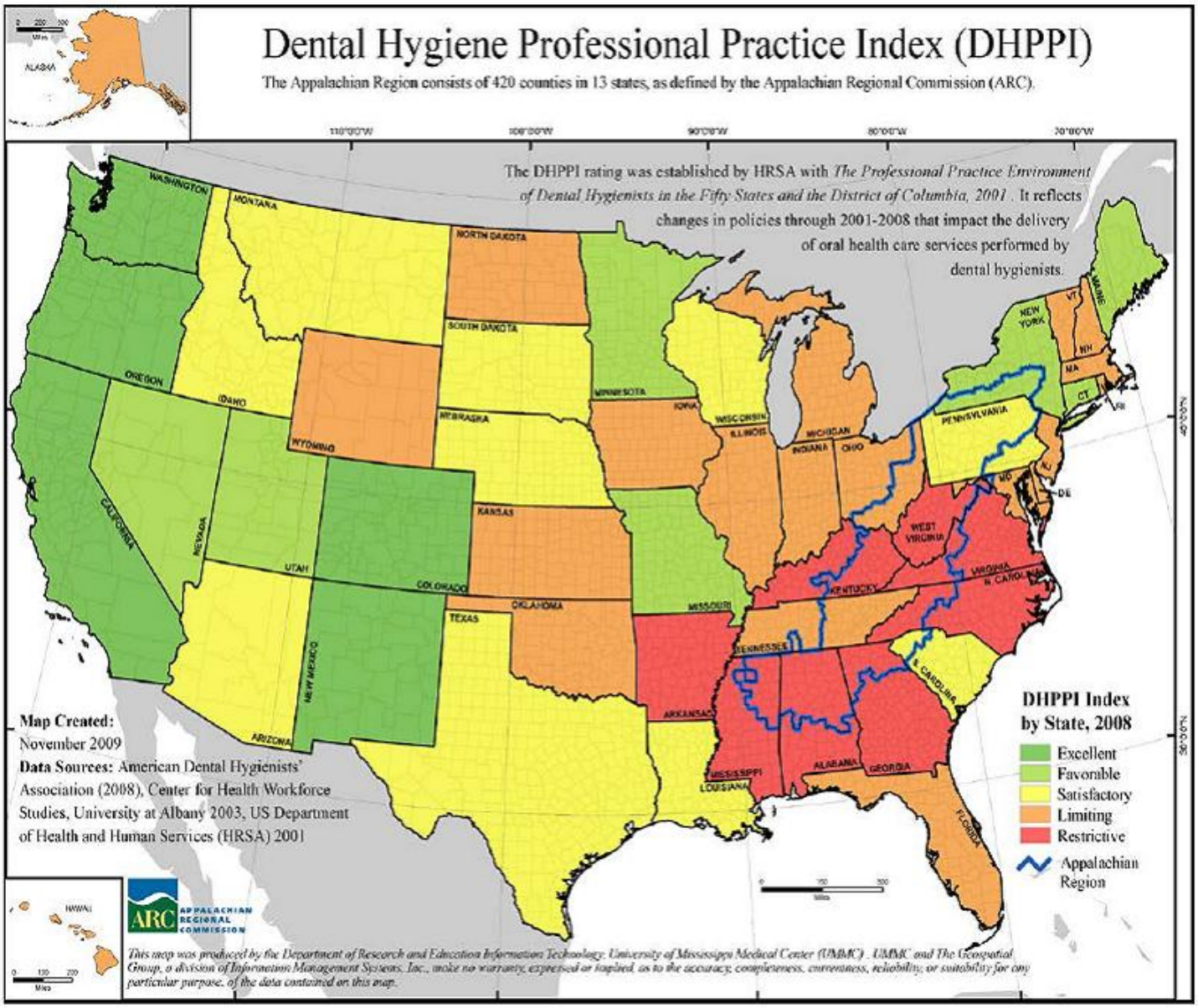
In 2003, the US Health Resources and Services Administration's Bureau of Health Professions developed a Dental Hygiene Professional Practice Index (DHPPI) which ranked states by their level of regulation of dental hygienists. It also created a taxonomy which placed states in categories ranging from "Restrictive" on the low end of the index to "Excellent" in states which were the least restrictive. At the time, Virginia was placed in the "Restrictive" category. According to the DHPPI, Virginia was the third most restrictive state in the country. Only Mississippi and West Virginia were listed as more restrictive.

This study was conducted prior to Virginia's pilot program and other regulatory changes affecting the practice of dentists, dental hygienists and dental assistants. A subsequent study ranked Virginia 20th, tied with Kentucky, Hawaii and the District of Columbia.[53] This study incorporated new laws and regulations, implemented in 2002, allowing general supervision in a variety of settings. Another ranking by the Appalachian Regional Commission and American Dental Hygienists Association, completed in 2008, however, had Virginia still ranked among the eight most restrictive states (see map, next page), and in the bottom 21 states as rated by autonomy in performing prophylaxis and cleaning.[54]



[53] Personal Communication with Dr. Morris Kleiner, dated 11/24/2014. Dr. Kleiner shared Virginia's results from Kleiner & Park. Nov. 2010. "Battles Among Licensed Occupations: Analyzing Government Regulations on Labor Market Outcomes for Dentists and Hygienists." NBER Working Paper No. 16560.

[54] Appalachian Regional Commission. December 2011. *An Analysis of Oral Health Disparities and Access to services in the Appalachian Region.* pp 42 & 43 & Appendix E.



Regulation's effect on Prices, outcomes and Access to Care

Ideally, health professions regulation will increase access to competent providers by removing competition from incompetent and possibly dangerous providers and giving consumers the confidence to access the health system. Counterintuitively, this should increase the market for health providers overall, and grow the supply of competent health providers by increasing demand for their services. Basically, if consumers have difficulty identifying competent care, the market may be flooded with cheaper but incompetent providers, driving competent providers out of business and scaring off consumers. While regulation may place upward pressure on

prices and wages for competent providers this should be matched by an increase in the supply of competent providers, minimizing the price impact and keeping it in line with the value of the increased quality provided.

Poorly formulated regulation, by contrast, may place undue limits on the supply of providers or their ability to provide services. This may increase the wages of existing practitioners, but the increased wages do not result in more people entering the profession, resulting in diminished access to care. Basically speaking, if professional regulation does not improve consumer's access to competent health providers, the regulations may be poorly formulated and amenable to improvement. Thus when economists and other researchers examine professional regulations, they focus on the interplay between prices and wages, health outcomes, and access to care. In this section we will highlight several studies that looked directly at professional regulation of dental hygienists.

National Studies

Staff identified several studies using national data to compare states. A seminal paper published by the National Bureau of Economic Research (NBER) in 1997 examined the dental health of incoming Air Force personnel compared to the overall restrictiveness of dental regulation in states. Although the study examines overall regulations, including barriers to entry of licensed dentists, it found that more restrictive regulation did not improve dental health outcomes or lower the costs associated with untreated dental disease, but did increase prices, "[c]onsequently, overly restrictive policies that limit customer access could reduce the welfare of consumers."[55]

A 2005 study using the DHPPI did not indicate that changes in dental hygienist scope of practice had any effect on the number of dentists or dental hygienists practicing in each state, or on dentist incomes. Fewer restrictions, however, were associated with increased dental hygienist salaries and with improvements in many oral health indicators. In particular, states with fewer restrictions tended to have a higher proportion of the population visit a *dentist* in the past year, fewer persons with teeth removed due to gum disease or tooth decay, and, among those with teeth removed, fewer teeth were removed.[56]

A study from University of Virginia's Weldon Cooper Center for Public Service and Department of Public Health Sciences expanded on the 2005 study by including entry restrictions (e.g., educational requirements, exam reciprocity) on dental hygienists to the DHPPI model. This study found that entry restrictions and practice restrictions jointly influence access to care. The largest effect is among the lowest income groups, among whom "a 1 percent increase in per capita [dental hygienist] employment would result in a .5 percent increase in dental visits." The study also found that fewer practice restrictions increase dental hygienist wages by $120 per point of DHPPI, and that middle-income consumers are sensitive to dental hygienist wages.[57]

A 2010 NBER Working Paper updated the DHPPI to 2007 and examined the interplay between dentist and dental hygienist regulation. This paper found "that greater autonomy by legally allowing hygienists to work independently of dentists is associated with an approximately 10 percent higher wage and a 6 percent increase in the employment growth of dental hygienists. In contrast, these state provisions are associated with approximately

[55] Kleiner & Kudrle. January 1997. "Does Regulation Improve Outputs and Increase Prices?: The Case of Dentistry." NBER Working Paper No. 5869.
[56] Wing, Langleier, Continelli & Battrell. Spring 2005. "A Dental Hygiene Professional Practice Index (DHPPI) and Access to Oral Health Status and Service Use in the United States". *Journal of Dental Hygiene*. Vol. 79 No. 2.
[57] Wanchek. March 2009. "The Effect of Dental Hygiene Regulation on Access to Care." Weldon Cooper Center for Public Service and Department of Public Health Sciences, University of Virginia.

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a 16 percent reduction in dental hourly earnings and a 26 percent reduction in dental employment growth". Additionally, the authors found that specific regulatory structures of the market for dental hygiene services, which require dental hygienists to be employed by dentists, may result in "deadweight losses to society".[58]

Another study from the UVA's Weldon Cooper Center found that loosening restrictions on dental hygienists (by moving up the DHPPI) reduces the number of dentists. The authors note several potential policy options to increase in the number of dentists in states. Increasing regulation on hygienists and other dental auxiliaries is one of these, but the authors noted that this "would be ill advised from a consumer and public health vantage point."[59]

The latest study staff identified looked specifically at seven procedures some states permit dental hygienists to independently perform: prophylaxis, fluoride treatment, local anesthesia, nitrous oxide, sealant application, amalgam restoration, and x-rays. This study found that prices in dental insurance claims for services were about 12 percent higher when only a dentist could perform them. Importantly, these services accounted for almost 40 percent of the 770 million dental claims in the database used by the study, so a 12 percent difference in prices could have a significant impact on consumer welfare and access. Additionally, the study found that direct reimbursement to hygienists for services increased utilization of the service by 3-4 percent.[60]

Finally, a 2011 report from the Institute of Medicine examining access to oral health care among underserved populations in the United States noted the following:

> *While restricting scope of practice is generally attributed to protecting consumers from unsafe or untrained professionals, data suggest that restrictive licensure laws in oral health are not tied to better health outcomes or supported by scientific evidence; in fact, stringent laws have been tied to increased consumer costs, which may restrict an individual's ability to access. Licensure laws also affect wages and employment opportunities. Studies show that more restrictive laws lead to increased income for dentists, while less restriction leads to decreased income and employment growth for dentists and greater income and employment opportunities for dental hygienists.*[61]

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[58] Kleiner & Park. Nov. 2010. "Battles Among Licensed Occupations: Analyzing Government Regulations on Labor Market Outcomes for Dentists and Hygienists." NBER Working Paper No. 16560.
[59] Rephann & Wanchek. March 2011. "Filling the Gaps: Dentist Disparities Along the Rural Urban Continuum." Center for Economic and Policy Studies, Weldon Cooper Center for Public Service, University of Virginia.
[60] Marier & Wing. March 2014. "Effects of Occupational Regulations on the Cost of Dental Services: Evidence from Dental Insurance Claims." *Journal of Health Economics.* Vol. 34, pp 131-143.
[61] Committee on Oral Health Access to Services, Institute of Medicine & National Resource Council. *Improving Access to Oral Health Care for Vulnerable and Underserved Populations.* http://www.iom.edu/Reports/2011/Improving-Access-to-Oral-Health-Care-for-Vulnerable-and-Underserved-Populations.aspx

Studies within States

A couple of studies examine the effects of regulations within states specifically.

An early study of the pilot program preceding California's RDHAP program found that 10 participating independent dental hygiene practices were more available to Medicaid patients than dentist offices and all provided care to at least one patient in non-traditional settings.[62]

A review of dental hygienist practices in Washington State, which allows independent practice at health facilities, found that 95% of dental hygienists worked primarily in dental offices, while only 8% worked in public/community health or nonclinical settings. However, this varied by rurality. Only 2.4% of dental hygienists in urban areas practiced independently, while 5.1% did so in "large rural places" and 5.8% did so in "small and isolated small places". Proclivity to treat Medicaid patients followed a similar pattern, with 5.7%, 6.3% and 13.4% of dentists in each area, respectively, treating Medicaid patients.[63]

Work Setting (RDHAP's can have multiple settings)	% of RDHAPs reporting working in this setting
Residential facility/assisted living	63.6%
Residence of homebound	61.0%
Nursing home/skilled-nursing facility	58.5%
Schools	22.1%
Independent office-base practice in DHPSA	14.4%
Other institution	12.8%
Hospital	9.3%
Local public health clinic	7.6%
Home health agency	5.9%
Community centers	5.1%
Federal/state/tribal institution	4.2%
Community/migrant health clinic	4.2%
Other	2.5%

A 2005 study of Colorado's independent dental hygienists sponsored by the American Dental Association found few unsupervised practices and that most of these were located in affluent and middle-income areas, and few were located in shortage areas. Fees for preventative services were similar to nearby dentists, but median wait times for an appointment was seven days for independent hygienists, and 14 days for dentists. The authors suggested that independent dental hygienist practices "lack business viability".[64]

Two regulatory studies examine California's Registered Dental Hygienists in Alternative Practice (RDHAP) program, which allows independent practice of bachelor-trained hygienists in shortage areas and in select facilities. A 2008 study by the University of California's Center for the Health Professions found relatively few RDHAPs in practice (less than 200 in 2007) but the authors concluded that RDHAPs were improving access to care. They cited "the combination of professional independence and a required focus on underserved populations [as] powerful in both motivating and structuring RDHAP practice."[65] A follow-up study published by the Journal of the California Dental Association found that RDHAPs tended to work in multiple settings, and that a majority worked in residential or nursing facilities or with homebound patients, and that significant numbers also provided services in other target institutions and in shortage areas.

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[62] Kushman, Perry & Freed. Sep-Oct. 1996. "Practice Characteristics of Dental Hygienists Operating Independently of Dentist Supervision." *Journal of Dental Hygiene.* Vol. 70, Iss. 5, pp 194-205.
[63] Andrilla & Hart. August 2007. "Practice Patterns and Characteristics of Dental Hygienists in Washington State". WWAMI Center for Health Workforce Studies." Final Report # 114.
http://depts.washington.edu/uwrhrc/uploads/CHWS%20FR114%20Andrilla.pdf
[64] Brown, House & Nash. 2005. "The Economic Aspects of Unsupervised Private Hygiene Practice and its Impact on Access to Care." *Dental Health Policy Analysis Series.* Health Policy Resources Center. Chicago.
[65] Mertz. May 2008. "Registered Dental Hygienists in Alternative Practice: Increasing Access to Dental Care in California".

RISK OF HARM TO THE CONSUMER

> *"Increasing availability to preventive services such as sealants and fluoride has been proven to significantly reduce the dental disease burden."*
> *-Virginia Department of Health*

Normally, the Board of Health Professions reviews risk of harm from unregulated practice to determine if the risks justify new regulation, pursuant to "Criterion One" of BHP's *Criteria for Evaluating the Need for Regulation*. Since regulation already exists for dental hygienists, we are doing the opposite: determining whether expanding dental hygienists' scope of practice would create a risk of harm strong enough to justify keeping the current limits in place, despite any benefits. This is pursuant to "Criterion Seven", which directs BHP to recommend the least restrictive regulation consistent with public protection.

Board staff found no evidence that any of the practice models used in other states, or the remote supervision protocol used by VDH, create an increased risk of harm to patients. Additionally, several studies found dental hygienists in independent practice or remote supervision models provide quality care and improve the oral health of those served. A 1997 study of a demonstration project that proceeded California's RDHAP program found that within the project, "independent dental hygiene practice did not increase the risk to the health and safety of the public."[66] A 1998 study and audit of six independent dental hygienist practices found that infection control, emergency management and record management protocols were followed, and that the care and the practice environment "do not exhibit any undue risk to the health and safety of the public."[67] A 2013 study found that individuals who had direct access to dental hygienists in public health programs improved in Quality of Life metrics, including improved health outcomes.[68] This outcome reflects outcomes from Virginia's Pilot Protocol. The VDH final report on the remote supervision protocol notes, "[i]ncreasing availability to preventive services such as sealants and fluoride has been proven to significantly reduce the dental disease burden."[69]

A 2013 meta-study of research into direct access by patients to dental hygienists or dental therapists found "no evidence of increased risk to patient safety" in the seven studies that covered patient safety. It did find deficiencies in knowledge about smoking cessation, diabetes, child abuse and domestic violence among these practitioners, but did not have evidence on how this compared to dentists' knowledge. It also found that patient satisfaction was high and that these practitioners tended to over-referral, although one study noted under-referral. Overall, the authors concluded "there was no evidence of significant issues of patient safety from the clinical activities" of

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[66] Freed, Perry & Kushman. Spring 1997. "Aspects of Quality of Dental Hygiene Care in Supervised and Unsupervised Practices." *Journal of Public Health Dentistry.* Vol 57, Iss 2, pp 68-72.
[67] Astroth & Cross-Poline. Winter 1998. "Pilot Study of Six Colorado Dental Hygiene Independent Practices." *Journal of Dental Hygiene.* Vol 72, Iss 1, pp 13-22.
[68] Olmstead, Rublee, Zurkawski & Kleber. Oct. 2013. "Public Health Dental Hygiene: An Option for Improved Quality of Care and Quality of Life." *Journal of Dental Hygiene.* Vol 87, Iss. 5, pp. 299-308.
[69] Virginia Dept. of Health. 2014. *Report on Services Provided by Virginia Department of Health Dental Hygienists Pursuant to a "Remote Supervision" Practice Protocol 2013.* Report Document No. 30.
http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/RD302014/$file/RD30.pdf

dental hygienists and dental therapists, and strong evidence of improved access to dental care and high levels of patient satisfaction.[70]

> *"Approximately one in 10 cases of death from pneumonia in elderly nursing home residents may be prevented by improving oral hygiene."*[50]

Furthermore, there is evidence that lack of preventative care, particularly among underserved and institutionalized populations, may have a detrimental effect on both the oral health and the overall health of Virginians. To the extent that the limited scope of practice for dental hygienists in Virginia contributes to a lack of access to preventative care, current restrictions may be contributing to this harm. The US Centers for Disease Control and Prevention (CDC) notes that most oral diseases are preventable.[71] In 2010, then Surgeon General VADM Regina M. Benjamin noted that "[a]lthough largely preventable, dental caries and periodontal disease are the two biggest threats to oral health, and are among the most common chronic diseases in the United States."[72] In Virginia, the Virginia Oral Health Coalition estimates that 312,184 Virginia children age 3 to 15 suffer from untreated dental decay and 653,566 adults age 35 to 74 suffer from dental decay or moderate to severe dental disease.[73] The prophylaxis services provided by hygienists, including cleaning, sealants, topical fluoride, education and the opportunity to see a dental health professional, are interventions proven to prevent dental caries and periodontal disease.

Dental disease itself has been linked to a variety of broader health concerns. Without proper hygiene, the mouth can provide a vector for infection, often causing inflammation. Former Surgeon General Benjamin notes that "[r]ecent research has indicated possible associations between chronic oral infections and diabetes, heart and lung disease, stroke, and low birth weight or premature births."[64] More recently, a comprehensive study by the Institutes of Medicine and the National Research Council concluded that "[o]ral health is inextricably linked to overall health".[74] This study noted that oral health can have broad effects on health and quality of life, ranging from chronic diseases, pregnancy outcomes, growth and function, and nutrition. Sometimes, however, the connection is more direct. In 2007, 12-year old Maryland resident Deamonte Driver died after an infection from a dental abscess (infection) that spread to his brain. Reports note that an $80 tooth extraction could have treated the abscess (and saved the $250,000 spent in an effort to treat the infection after it spread) but preventative care may have addressed the problem even earlier: tooth decay and periodontal disease are major causes of dental abscesses. [75] While Deamonte Driver's case is unique, a decrease in the prevalence of dental disease may also decrease the prevalence of similar abscesses and infections.

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[70] Innes & Evans. 2013. "Evidence of Improved Access to Dental Care with Direct Access Arrangements." *Evidence Based Dentistry.* Vol 14, Iss 2, pp 36-37.
[71] Centers for Disease Control and Prevention. 2011. "Oral Health: Preventing Cavities, Gum Disease, Tooth Loss, and Oral Cancers at a Glance 2011". http://www.cdc.gov/chronicdisease/resources/publications/aag/doh.htm.
[72] Benjamin. March-Apr. 2010. "Surgeon General's Perspectives: Oral Health: The Silent Epidemic". *Public Health Reports*. Vol. 125, pg 158.
[73] Virginia Oral Health Coalition. "Oral Health in Virginia". Website. http://www.vaoralhealth.org/ORALHEALTHINVIRGINIA.aspx Accessed September 2014.
[74] Institute of Medicine & National Research Council of the National Academies. 2011. *Improving Access to Oral Health Care for Vulnerable and Underserved Populations.* National Academies Press. Washington D.C. pg 67. http://www.iom.edu/Reports/2011/Improving-Access-to-Oral-Health-Care-for-Vulnerable-and-Underserved-Populations.aspx
[75] Otto, Mary. Feb. 28, 2007. "For Want of a Dentist". *The Washington Post.* http://www.washingtonpost.com/wp-dyn/content/article/2007/02/27/AR2007022702116.html

As noted earlier, although data is sparse, residents of health facilities such as nursing homes often suffer from poor oral hygiene and a lack of access to dental care. The effects of poor oral hygiene on this population can be devastating. Numerous studies show a positive correlation between poor oral hygiene and deadly respiratory diseases[76], including respiratory tract infections and pneumonia. One meta-study which examined 15 separate randomized controlled trials found that "[a]pproximately one in 10 cases of death from pneumonia in elderly nursing home residents may be prevented by improving oral hygiene."[77] While facility administrators and staff retain primary responsibility for oral hygiene in facilities, increased access to the preventive and screening services provided by dental hygienists may also be valuable.

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[76] Azarpazhooh & Leake. Sept., 2006. "Systematic Review of the Association Between Respiratory Diseases and Oral Health." *Journal of Periodontology.* Vol. 77, Iss. 9. pp. 1465-82.

[77] Sjogren, Nilsson, Forsell, Johansson & Hoogstraate. Sept. 2008. "A Systemic Review of the Preventive Effect of Oral Hygiene on Pneumonia and Respiratory Tract Infection in Elderly People in Hospitals and Nursing Homes: Effect Estimates and Methodological Quality of Randomized Controlled Trials." *Journal of the American Geriatrics Society.* Vol. 56, Iss. 11, pp. 2124-2130.

POLICY OPTIONS

The following list of policy options were developed by Board staff. Committee and Board members are encouraged to consider other appropriate options. Recommendations of the Board of Health Professions are advisory only. Recommendations are presented to the Director and Deputy Director of the Department of Health Professions, the Secretary of Health and Human Services, the Governor, and the General Assembly.

Option 1: Take No Action

Take no action is the default option. Selection of this option implies that an expanded scope of practice for dental hygienists may pose a risk of harm to consumers, that the economic costs of current regulations are justified, and that current regulations are the least restrictive level of occupational regulation consistent with public protection.

Option 2: Recommend Independent Practice for Dental Hygienists

Selection of this option implies that dental hygienists have the education and professional infrastructure to practice independently of oversight by a dentist, that independent practice is consistent with public protection and that independent practice does not pose a risk of harm to consumers. Option 2 may be combined with Option 4 or Option 5 to limit Independent Practice to certain areas or facilities, or to dental hygienists with certain education and experience. It may also be combined with Option 6 to provide specific guidance to the Board of Dentistry on regulatory frameworks.

Option 3: Recommend Remote Supervision (Collaborative Practice) Protocols for Dental Hygienists

Selection of this option implies that dental hygienists have the educational and professional infrastructure for expanded practice under the remote supervision of dentists, that remote supervision by dentists is the least restrictive form of regulation consistent with public protection, the economic costs of associated with remote supervision are justified, and that a remote supervision practice model does not pose a risk of harm to consumers. Option 3 may be combined with Option 4 or Option 5 to limit Independent Practice to certain areas or facilities, or to dental hygienists with certain education and experience. It may also be combined with Option 6 to provide specific guidance to the Board of Dentistry on regulatory frameworks.

Option 4: Recommend Restricting Expanded Scope of Practice to Certain Areas, Facilities or Populations

Selection of this option implies that the balance of risk of harm and economic costs (specifically, reduced access to care) is different in some areas and facilities, and for some populations, than others. It implies that for selected settings and populations the economic costs of more restrictive regulations are not justified. A list of potential special areas, populations and settings appear in the Policy Options Matrix, next page.

Option 5: Recommend Restricting Expanded Scope of Practice to Dental Hygienists with Certain Training and/or Experience.

Selection of this option implies that dental hygienists require additional education and/or experience beyond entry-level requirements to practice remotely or independently without an increased risk of harm to patients, and that this is the lowest level of education or experience consistent with public protection, and that the economic costs of this education or experience are justified. A list of potential education and experience combinations are included in the Policy Options Matrix, next page.

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Option 6: Direct the Regulatory Research Committee to Convene a Workgroup to Develop Expanded Practice Protocols.

Selection of this option would facilitate implementation of recommendations and development of appropriate regulations regarding appropriate clinical tasks, level of supervision, and other requirements. The workgroup shall consist of representatives of stakeholders, including (but not limited to) the Virginia Board of Dentistry, the Virginia Department of Health, the Virginia Dental Association, the Virginia Dental Hygienists Association, the Virginia Oral Health Coalition, and Virginia Commonwealth University's School of Dentistry, as well as a representative of a Virginia school of dental hygiene, organizations representing affected facilities, and patient or community advocates, and other representatives as selected by the Regulatory Research Committee.

Policy Option Matrix

The following matrix may assist Committee members in considering policy options. Members may note their recommended scope of practice for education level and for each setting or group of settings. Members may use "GS" for general supervision (the current requirement in most circumstances), "RS" for remote supervision (e.g., VDH protocol), or "IP" for independent practice (e.g., California's RDHAPs in certain settings). Board staff has filled in the current VDH protocol as an example.

	Settings									
Education/ Experience	No Setting Restrictions	In all Special Settings	dHPSA	Safety Net Clinics	Long Term Care	Hospitals	Homebound/ Home Health Agency	K-12 Schools	Public Health Agency	Other Facility
Entry-Level										
Two Years Experience (VDH Protocol)									RS	
Five Years Experience										
Associate and two years experience										
Associate and five years experience										
Bachelors degree										
Bachelors and two years experience										
Other Education/ Experience										

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APPENDICES

APPENDIX A: VIRGINIA PUBLIC HEALTH PRACTICE PROTOCOL

Available from the Virginia Board of Dentistry website:
(http://www.dhp.virginia.gov/dentistry/dentistry_laws_regs.htm)

Title of document: Protocol adopted by Virginia Department of Health (VDH) for Dental Hygienists to Practice in an Expanded Capacity under Remote Supervision by Public Health Dentists

Reference to 18VAC60-20-220: Regulations Governing Dental Practice – Dental Hygienists

Filed by: Virginia Board of Dentistry

Date filed: September 7, 2012

Document available from:

Board of Dentistry
9960 Mayland Drive, Suite 300
Henrico, VA 23233

Definitions:

- *"Expanded capacity"* means that a VDH dental hygienist provides education, assessment, prevention and clinical services as authorized in this protocol under the remote supervision of a VDH dentist.
- *"Remote supervision"* means that a public health dentist has regular, periodic communications with a public health dental hygienist regarding patient treatment, but who has not done an initial examination of the patients who are to be seen and treated by the dental hygienist, and who is not necessarily onsite with the dental hygienist when dental hygiene services are delivered.

Management:

- Program guidance and quality assurance shall be provided by the Dental Program in the Division of Child and Family Health at VDH for the public health dentists providing supervision under this protocol. Guidance for all VDH dental hygienists providing services through remote supervision is outlined below:
    - VDH compliance includes a review of the remote supervision protocol with the dental hygienist. The hygienist will sign an agreement consenting to remote supervision according to the protocol. The hygienist will update the remote agreement annually attaching a copy of their current dental hygiene license, and maintain a copy of the agreement on-site while providing services under this protocol.
    - VDH training by the public health dentist will include didactic and on-site components utilizing evidence based protocols, procedures and standards from the American Dental Association, the American Dental Hygienists' Association, the Centers for Disease Control and Prevention, Association of State and Territorial Dental Directors, as well as VDH OSHA, Hazard Communication and Blood Borne Pathogen Control Plan.
    - VDH monitoring during remote supervision activities by the public health dentist shall include tracking the locations of planned service delivery and review of daily reports of the services

provided. Phone or personal communication between the public health dentist and the dental hygienist working under remote supervision will occur at a minimum of every 14 days.

- VDH on-site review to include a sampling of the patients seen by the dental hygienist under remote supervision will be completed annually by the supervising public health dentist. During the on-site review, areas of program and clinical oversight will include appropriate patient documentation for preventive services (consent completed, assessment of conditions, forms completed accurately), clinical quality of preventive services (technique and sealant retention), patient management and referral, compliance with evidence-based program guidance, adherence to general emergency guidelines, and OSHA and Infection Control compliance.

- No limit shall be placed on the number of full or part time VDH dental hygienists that may practice under the *remote supervision* of a public health dentist(s)
- The dental hygienist may use and supervise assistants under this protocol but shall not permit assistants to provide direct clinical services to patients.
- The patient or responsible adult should be advised that services provided under the remote supervision protocol do not replace a complete dental examination and that he/she should take his/her child to a dentist for regular dental appointments.

Remote Supervision Practice Requirements:

- The dental hygienist shall have graduated from an accredited dental hygiene school, be licensed in Virginia, and employed by VDH in a full or part time position and have a minimum of two years of dental hygiene practice experience.
- The dental hygienist shall annually consent in writing to providing services under remote supervision.
- The patient or a responsible adult shall be informed prior to the appointment that no dentist will be present, that no anesthesia can be administered, and that only limited described services will be provided.
- Written basic emergency procedures shall be established and in place, and the hygienist shall be capable of implementing those procedures.

Expanded Capacity Scope of Services:

Public health dental hygienists may perform the following duties under *remote supervision:*

- Performing an initial examination or assessment of teeth and surrounding tissues, including charting existing conditions including carious lesions, periodontal pockets or other abnormal conditions for further evaluation by a dentist, as required.
- Prophylaxis of natural and restored teeth.
- Scaling of natural and restored teeth using hand instruments, and ultrasonic devices.
- Assessing patients to determine the appropriateness of sealant placement according to VDH Dental Program guidelines and applying sealants as indicated. Providing dental sealant, assessment, maintenance and repair.
- Application of topical fluorides.
- Providing educational services, assessment, screening or data collection for the preparation of preliminary written records for evaluation by a licensed dentist.

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Required Referrals:

- Public health dental hygienists will refer patients without a dental provider to a public or private dentist with the goal to establish a dental home.
- When the dental hygienist determines at a subsequent appointment that there are conditions present which require evaluation for treatment, and the patient has not seen a dentist as referred, the dental hygienist will make every practical or reasonable effort to schedule the patient with a VDH dentist or local private dentist volunteer for an examination, treatment plan and follow up care.

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APPENDIX B: REGIONAL ORAL HEALTH WORKFORCE OVERVIEW

By AHEC Region (http://vahwdc.tumblr.com/RegionalCareforce)

APPENDIX C: AMERICAN DENTAL HYGIENIST DIRECT ACCESS STATE LIST

Available at: http://www.adha.org/direct-access

Prepared by staff of the American Dental Hygienists' Association, June 2014

Direct Access States

For purposes of this document, direct access means that the dental hygienist can initiate treatment based on his or her assessment of patient's needs without the specific authorization of a dentist, treat the patient without the presence of a dentist, and can maintain a provider-patient relationship.

Alaska 2008
AS 08.32.115
Collaborative Agreement:
Hygienist may provide services according to terms of collaborative agreement. Dentist's presence, diagnosis or treatment plan is not required unless specified by agreement. Care under the agreement can be provided in settings outside of a dentists "usual place of practice" (i.e. private dental office).
Special Requirements: Hygienist must have minimum of 4,000 hours of clinical experience within preceding 5 years. Agreement must be approved by state board of dental examiners.
Services: Agreement can authorize nearly the entire dental hygiene scope of practice (patient education, prophylaxis, sealants, x-rays, etc).
Notes:
- Dentists are limited to 5 or less collaborative agreements with dental hygienists.

Arizona 2006
32-1289B
Dental hygienist working under contract for schools, public health settings and institutions may screen and apply fluoride unsupervised.

Arizona 2004
Sec. 32-1281 H, 32-1289
Affiliated Practice Agreement:
A dental hygienist with a written affiliated practice agreement may perform dental hygiene services on patients who meet certain financial criteria and are enrolled in a federal, state, county or local healthcare program. Written agreement must be submitted to state board of dental examiners. Hygienists must refer patients for additional treatment by a dentist within 12 months of first treatment.
Special Requirements: Hygienist must have 5 years of practice experience and have been actively engaged in dental practice for at least 2,000 hours in the preceding 5 years.
Services: The agreement must outline practice settings and services provided (nearly all of dental hygiene scope aside from root planing, local anesthesia, and nitrous oxide are allowed).
Notes:
- Direct Medicaid reimbursement allowed.

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Arkansas 2010
Sec. 17-82-701
Collaborative Agreement:
A dental hygienist with a Collaborative Care permit I or II who has entered into a collaborative agreement may perform dental hygiene services on children, senior citizens, and persons with developmental disabilities in long-term care facilities, free clinics, hospitals, head start programs, residence of homebound patients, local health units, schools, community health centers, state and county correctional institutions. Hygienist must have written agreement with no more than one dentist.
Special Requirements: Must have malpractice insurance. Collaborative Care Permit I: Hygienist must have 1,200 hours of clinical practice experience, or have taught dental hygiene courses for 2 of the proceeding 3 years. Collaborative Care Permit II: Hygienists must have 1,800 hours of clinical practice experience or taught dental hygiene courses for 2 of the proceeding 3 years and has completed 6 hours of CE courses.
Services: Collaborative Care Permit I may provide prophylaxis, fluoride treatments, sealants, dental hygiene instruction, assessment and other services in scope if delegated by consulting dentist to children in public settings without supervision or prior examination.
Collaborative Care Permit II may provide prophylaxis, fluoride treatments, sealants, dental hygiene instruction, assessment, and other services in scope if delegated by the consulting dentist to children, senior citizens, and persons with developmental disabilities in public settings without supervision or prior examination.

California 2002
Sec 1763 (a) 2002
Any dental hygienist may provide screening, apply fluorides and sealants without supervision in government created or administered public health programs.

California 1998
Sec. 1774, 1775
Registered Dental Hygienist in Alternative Practice (RDHAP):
RDHAPs may provide unsupervised services for homebound persons or at schools, residential facilities, institutions and in dental health professional shortage areas. RDHAPs can offer a patient care for up to 18 months and provide additional care if the patient obtains a prescription from a dentist or physician.
Special Requirements: RDHAP must have a Bachelors degree (or equivalent), 3 years of clinical experience, completion of additional 150 clock hours in designated courses and pass exam. RDHAP must provide board with documentation of an existing relationship with at least one dentist for referral, consultation, and emergency services.
Services: All services permitted under general supervision, including prophylaxis, root planing, pit and fissure sealants, charting and examination of soft tissue.
Notes:
- Direct Medicaid reimbursement is allowed.

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Colorado 1987
Sec. 12-35-122.5
Unsupervised Practice:
There is no requirement that a dentist must authorize or supervise most dental hygiene services. Hygienist may also own a dental hygiene practice.
Special Requirements: None.
Services: Hygienist can provide dental hygiene diagnosis, x-rays, remove deposits, accretions, and stains, curettage without anesthesia, apply fluorides and other recognized preventive agents, topical anesthetic, oral inspection and charting. Local anesthesia requires general supervision.
Notes:
- Direct Medicaid reimbursement allowed.

Connecticut 1999
Section 20-126l
Public Health Dental Hygienist:
Dental hygienists with 2 years experience may practice without supervision in institutions, public health facilities, group homes and schools.
Special Requirements: Hygienist must have at least 2 years of experience.
Services: Hygienist can provide oral prophylaxis, remove deposits, accretions and stains, root planing, sealants, assessment, treatment planning and evaluation.
Notes:
- Direct Medicaid reimbursement allowed.

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Florida 2011
Section 466.003. 466.024
Dental hygienists may provide services without the physical presence, prior examination, or authorization of a dentist, provided that a dentist or physician give medical clearance prior to performance of a prophylaxis in "health access settings." A dentist must examine a patient within 13 months following a prophylaxis and an exam must take place before additional oral services may be performed.
Health access settings are a program of the Department of children and Family Services, the Department of Health, the Department of Juvenile Justice, a nonprofit community health center centers, a Head Start centers, an FQHC, a school based prevention program, or a clinic operated by an accredited dental or dental hygiene program.
Services: dental charting, take vital signs, record histories, apply sealants and fluorides (including varnish) and perform the prophylaxis.
Notes:
- The setting operating the program may bill a third party for reimbursement of the hygienist's services. The hygienist must maintain professional liability insurance.

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Idaho 2004
I.C. 54-903 (9) / 54-904
Extended Access Endorsement:
Hygienist can provide services in hospitals, long term care facility, public health facility, health or migrant clinic or other board approved setting if the dentist affiliated with setting authorizes services.
Special requirements: Hygienist must be an employee of the facility or obtain extended care permit. ECP requires 1,000 hours experience in last 2 years.
Services: As determined by authorizing dentist.

Iowa 2004
Rule 650-10.5 (153)
Public Health Dental Hygienist:
Hygienist may administer care based on standing orders and a written agreement with a dentist. Services can be administered in schools, Head Start settings, nursing facilities FQHCs, public health vans, free clinics, community centers and public health programs.
Special Requirements: Hygienist must have 3 years of clinical experience and must submit an annual report to the state department of health noting the number of patients treated/services administered.
Services: All services in the dental hygiene scope (except local anesthesia and nitrous) may be provided once to each patient. In order to offer repeat services other than assessment, screening and fluoride, a dentist must examine the patient.

Kansas 2003/2012
Sec. 65-1456
Extended Care Permit I, II & III (ECP):
Hygienist may practice without the prior authorization of a dentist if the hygienist has an agreement with sponsoring dentist who will monitor his/her practice. Examples of settings are schools, Head Start programs, state correctional institutions, local health departments, indigent care clinics, and in adult care homes, hospital long term units, or at the home of homebound persons on medical assistance. The ECP I permit authorizes treatment on children in various limited access categories, while the EPT II permit is for seniors and persons with developmental disabilities. ECP III permit authorizes hygienists to treat a wider range of patients, including underserved children, seniors and developmentally disabled adults and to provide more services than ECP I and II.
Special Requirements: Hygienist must have 1,200 clinical hours or 2 year teaching in last 3 years for ECP I; 1,600 hours or 2 years teaching in last 3 years plus 6 hour course for ECP II. Hygienist must also carry liability insurance and must be paid by dentist or facility. ECP III requires 2,000 hours clinical experience plus 18 clock hour board approved course.
Services: ECP I and II provide prophylaxis, fluoride treatments, dental hygiene instruction, assessment of the patient's need for further treatment by a dentist, and other services if delegated by the sponsoring dentist. ECP III can additionally provide atraumatic restorative technique, adjustment and soft reline of dentures, smoothing sharp tooth with handpiece, local anesthesia in setting where medical services available , extraction of mobile teeth.
Notes:
- Dentist can only monitor 5 practices.

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Kentucky 2010
313.040
Volunteer Community Health Settings:
A dental hygienist may provide the services listed below without the supervision of a dentist in volunteer community health settings.
Services: Hygienist can provide dental hygiene instruction, nutritional counseling, oral screening with subsequent referral to a dentist, fluoride application, demonstration of oral hygiene technique, and sealants.

Maine 2008
Sec. B-1. 32 MRSA c. 16, sub-c. 3-B
Independent Practice Dental Hygienist:
A dental hygienist licensed as an independent practice dental hygienist may practice without supervision by a dentist in all settings.
Special Requirements: Hygienist must possess a bachelor's degree from a CODA accredited dental hygiene program and 2,000 work hours of clinical practice during the two years preceding the application or possess an associate degree from a CODA accredited dental hygiene program and 6,000 work hours of clinical practice during the six years preceding the application. They are also required to provide a referral plan to patients in need of additional care by a dentist.
Services: Hygienist may interview patients and record complete medical and dental histories, take and record the vital signs of blood pressure, pulse and temperature, perform oral inspections, recording all conditions that should be called to the attention of a dentist; perform complete periodontal and dental restorative charting; perform all procedures necessary for a complete prophylaxis, including root planing; apply fluoride to control caries; apply desensitizing agents to teeth; apply topical anesthetics; apply sealants; smooth and polish amalgam restorations, limited to slow speed application only; cement pontics and facings outside the mouth; take impressions for athletic mouth guards and custom fluoride trays; place and remove rubber dams; place temporary restorations in compliance with the protocol adopted by the board; and apply topical antimicrobials, excluding antibiotics, including fluoride, for the purposes of bacterial reduction, caries control and desensitization in the oral cavity. The independent practice dental hygienist shall follow current manufacturer's instructions in the use of these medicaments.

Maine 2001
Rule 02 313 Chap. 1. Sec. 4
Public Health Dental Hygienist:
Hygienist may provide services in a public or private school, hospital or other non-traditional practice setting under a public health supervision status granted by the dental board on a case-by-case basis. The hygienist may perform services rendered under general supervision. The dentist should have specific standing orders and procedures to be carried out, although the dentist need not be present when the services have been provided. A written plan for referral or an agreement for follow-up shall be provided by the public health hygienist recording all conditions that should be called to the attention of the dentist. The supervising dentist shall review a summary report at the completion of the program or once a year.

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Special Requirements: A dental hygienist must apply to the board to practice providing such information the board deems necessary. The board must take into consideration whether the program will fulfill an unmet need, whether a supervising dentist is available and that the appropriate public health guidelines and standards of care can be met and followed.
Services: All services that can be provided under general supervision. Dentist's diagnosis for sealants is not needed in public health or school sealant programs.
Notes:
- Direct Medicaid reimbursement allowed.

Maryland 2010/2014
10.44.21.10
General Supervision:
A dental hygienist may practice dental hygiene under the general supervision of a dentist in a long-term care facility in accordance with this regulation. A dental hygienist practicing under the general supervision of a licensed dentist in a long-term care facility shall have a written agreement with the supervising dentist that clearly sets forth the terms and conditions under which the dental hygienist may practice.
Special Requirements:
A dental hygienists must hold an active license to practice dental hygiene in the State, hold a current certificate evidencing Health Care Provider Level C Proficiency, or its equivalent, in cardiopulmonary resuscitation, have at least 2 years of active clinical practice in direct patient care, and ensure that the long-term care facility where the dental hygienist will practice under general supervision has:
(a) A written medical emergency plan in place;
(b) Adequate equipment, including portable equipment and appropriate armamentarium, available for the appropriate delivery of dental hygiene services; and
(c) Adequate safeguards to protect the patient's health and safety.
Services: Limit dental hygiene tasks and procedures to toothbrush prophylaxis, application of fluoride, dental hygiene instruction, and other duties as may be delegated, verbally or in writing, by the supervising dentist.

Massachusetts 2009
Chap. 112, Sec. 51.
Public Health Dental Hygienist:
Hygienist may provide dental hygiene services without the supervision of a dentist in public health settings including, and not limited to, hospitals, medical facilities, schools, and community clinics. Prior to providing services, a public health dental hygienist must have a written collaborative agreement with a local or state government agency or institution, or licensed dentist that states the level of communication with the dental hygienist to ensure patient health and safety. Public health dental hygienists shall provide patients with a written referral to a dentist and an assessment of further dental needs.
Special Requirements: Hygienist must have at least 3 years of full-time clinical experience practicing in a public health setting and any other training deemed appropriate by the department of health.
Services: Hygienist can provide full scope of dental hygiene practice services allowed under general supervision in the private office, including prophylaxis, root planing, curettage, sealants and fluoride.
Notes:
- Direct Medicaid reimbursement allowed.

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Michigan 2005
Sec. 333.16625
PA 161 Dental Hygienist:
Hygienist with grantee status can practice in a public or nonprofit entity, or a school or nursing home that administers a program of dental care to a dentally underserved population. Collaborating dentist need not be present for or authorize treatment, but hygienist must have continuous availability of direct communication with a dentist to establish emergency protocol and review patient records.
Special Requirements: Hygienist must apply to the state department of community health for designation as grantee health agency.
Services: Hygienist can provide full scope of dental hygiene services allowed under general supervision, including prophylaxis, sealants, and fluoride treatments.

Minnesota 2001
Section 150A. 10, Subd. 1a
Collaborative Practice:
Hygienist must enter into a written collaborative agreement with a licensed dentist that designates authorization for the services provided by the dental hygienist (agreement need not be submitted to state). Collaborative practice hygienist can be employed or retained by a health care facility, program, or nonprofit organization.
Special Requirements: Hygienist must have at least 2,400 hours of clinical experience in the preceding 18 months or a career total of 3,000 hours, including a minimum of 200 hours of clinical practice in two of the past three years. Hygienist must also meet additional continuing education requirements.
Services: Collaborative practice hygienist can administer prophylaxis, application of topical preventive and prophylactic agents, application of sealants, fluoride varnishes, coronal polishing, preliminary charting, x-rays and root planing.
Notes:
- Direct Medicaid reimbursement allowed.

Missouri 2001
Statute 332.311.2
Public Health Dental Hygienist:
Hygienist may provide services without supervision in public health settings to Medicaid eligible children and can be directly reimbursed by Medicaid.
Special Requirements: Hygienist must have 3 years of experience.
Services: Hygienist can provide oral prophylaxis, sealants, and fluorides.
Notes:
- Direct Medicaid reimbursement allowed.

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Montana 2003
Sec. 37-4-405
Public Health Dental Hygienist/Limited Access Permit (LAP):
Dental hygienists may obtain a limited access permit to practice under public health supervision in a variety of federally funded health centers and clinics, nursing homes, extended care facilities, home health agencies, group homes for the elderly, disabled, and youth, head start programs, migrant work facilities and local and state public health facilities. Public health supervision means the hygienist can provide services without the authorization of a dentist provided he or she follows protocols to be established by the board and refers any patients needing dental treatment.
Special requirements: Hygienist must have 2400 hours experience in the last 3 years; 3000 hours over career with 350 hours each of the last 2 years. An additional 12 hours CE every 2 year and liability insurance is also required.
Services: Hygienist can provide prophylaxis, fluoride, root planing, sealants polish restorations, x-rays for diagnosis by a dentists and oral cancer screening.
Notes:
- Direct Medicaid reimbursement allowed.

Nebraska 2007
Sec. 71-193.18
Public Health Dental Hygienist:
The Department of Health may authorize an unsupervised RDH to provide public health related services in a public health setting or a healthcare or related facility.
Special requirements: Hygienist must have 3000 hours experience in at least 4 of last 5 years. Hygienist must also have professional liability insurance.
Services: Hygienist can perform prophylaxis for a healthy child, pulp vitality testing and preventive measures including fluorides and sealants.
Notes:
- Direct Medicaid reimbursement allowed.

New Hampshire 1993
Rule 302.02(d); 402.01 (c)
Public Health Supervision:
Hygienist may treat patients in public or private school, hospital or institution, or residence of a homebound patient. Supervising dentist must authorize hygienist to provide services (i.e. standing orders) but need not be present for care.
Special Requirements: None.
Services: Hygienist can provide instruction in oral hygiene, topical fluorides, oral prophylaxis, assess medical/dental history, periodontal probing/charting, and sealants.

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New Mexico 2007
Sec. 61-5-C
No supervision required for any dental hygienist to apply fluorides, and remineralization agents.

New Mexico 1999 /2011
Sec. 61-5A-4D, Rule 16.5.17
Collaborative Practice:
Hygienist can practice in any setting with collaborative agreement and can own or manage a collaborative dental hygiene practice. Hygienist must enter into a written agreement with one or more collaborative dentist(s) which must contain protocols for care. Hygienist must refer patients for annual dental exam.
Special Requirements: Hygienist must have 2400 hours of active practice in preceding 18 months or 3000 hours in 2 of the past 3 years.
Services: Collaborative practice hygienist can provide a dental hygiene focused assessment, x- rays, oral prophylaxis, fluoride treatments, assessment for and application of sealants, root planing, and may prescribe and administer and dispense topically applied fluoride and antimicrobials, depending on the specific services allowed in agreement with collaborating dentist.
Notes:
- Dentist may not collaborate with more than 3 hygienists.
- Direct Medicaid reimbursement allowed.

New York 2005
Rules Sec. 61.9
General Supervision:
Hygienist can initiate patient care in any public or private setting. Dentist must authorize (i.e. issue standing orders) for dental hygienist and be available for consultation, diagnosis, and evaluation.
Services: Hygienist can provide prophylaxis, root planing, fluoride treatments, patient education, charting, and x-rays without a prior dental examination, the presence of a dentist, or need to refer to a dentist.
New York 2013
(A.7866/S.5757) to apply to Sec. 6606 of N.Y. Education Law
Collaborative Practice:
The practice of dental hygiene may be conducted in the office of any licensed dentist or in any appropriately equipped school or public institution but must be done either under the supervision of a licensed dentist or, in the case of a registered dental hygienist working for a hospital, pursuant to a collaborative arrangement with a licensed and registered dentist who has a formal relationship with the same hospital in accordance with regulations promulgated by the department in consultation with the department of health.
Notes:
- This act shall take effect January 1, 2015 - Rules Pending.

Nevada 1998
Sec. 631.287
Public Health Dental Hygienist:
Dental hygienists may obtain approval to work as public health dental hygienists in schools, community centers, hospitals, nursing homes and such other locations as the state dental health officer deems appropriate without supervision.
Special Requirements: Special endorsement from the dental board. Submissions of protocol to describe the methods a hygienist will use to provide services.
Services: May provide most hygiene services and may administer local and nitrous in a facility with certain equipment and dentist authorization.
Notes:
- Direct Medicaid reimbursement allowed.

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Ohio 2010
Sec. 4715.363
Oral Health Access Supervision Permit Program:
Dental Hygienists who possess an oral health access supervision permit may provide dental hygiene services through a written agreement with a dentist in public health settings including, and not limited to, health care facility, state correctional institutions, residential facilities, schools, shelters for victims of domestic abuse or runaways, foster homes, nonprofit clinics, dispensarys, mobile dental clinic. Prior to providing services, a dental hygienist with an oral health access supervision permit must have a written agreement with a dentist, who possesses an oral health supervision permit, that states the dentist has evaluated the dental hygienists skills and the dentist has reviewed and evaluated the patient's health history. The dentist need not be present or examine the patient before the dental hygienist may provide care. The collaborating dentist must perform a clinical evaluation of the patient before the dental hygienist may provide subsequent care. The evaluation may be done using electronic communication.
Special Requirements: Two years and a minimum of three thousand hours of clinical experience; minimum of twenty-four continuing education credits during the two years prior to apply for the oral health access supervision permit including a course identification and prevention of potential medical emergencies; and completed an oral health access supervision permit class approved by the board.
Services: Prophylactic, preventive and other procedures a dentist can delegate to a hygienist except definitive root planing, definitive subgingival curettage, administration of local anesthesia and other procedures specified in rules adopted by the board.

Ohio 2013
House Bill 59 (Amendment adopted. Not yet codified)
The requirement for a dentist to perform an examination and diagnose a patient prior to the patient receiving denta.l hygiene services through a program operated by a school district or other specified entity does not apply when the only services to be provided are the placement of pit and fissure sealants.

Oklahoma 2003
Sec. 328.34 C
General Supervision:
Hygienist may provide services outside of the private dental office for a patient not examined by the dentist. Dentist must authorize care in writing.
Special Requirements: Hygienist must have at least two years of experience.
Services: Most dental hygiene services, including sealants, fluorides, and prophylaxis, to a patient one time prior to a dental exam.

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Oregon 2011
Sec 680.205
Expanded Practice Dental Hygienist (EPDH)
Replaces Limited Access Permit. Adds services to patients below federal poverty level and other settings approved by the board to EPDH practice settings. Adds limited prescriptive authority, local anesthesia, temporary restorations and dental assessments to unsupervised EPDH scope if EPDH has agreement with a dentist. Requires insurance reimbursement of EPDHs.

Oregon 1997
Sec. 680.200
Rule 818-035-0065
Limited Access Permit (LAP):
Dental hygienists who have obtained a limited access permit (LAP) may initiate unsupervised services for patients in a variety of limited access settings such as extended care facilities, facilities for the mentally ill or disabled, correctional facilities, schools and pre-schools, medical offices or offices operated or staffed by a nurse practitioner midwives or physicians assistants, and job training centers. Hygienist must refer the patient annually to a licensed dentist available to treat the patient.
Special requirements: Hygienist must have 2,500 hours of supervised dental hygiene practice; and completed 40 hours of board approved courses in an accredited dental hygiene program or completed a course of study approved by the board that includes at least 500 hours of dental hygiene practice on limited access patients while under direct faculty supervision. Hygienist must also have liability insurance.
Services: LAP Hygienists can provide all dental hygiene services, except that some (local anesthesia, pit and fissure sealants, denture relines, temporary restorations, radiographs and nitrous oxide) must be supervised by a dentist. Hygienist may prescribe fluorides and assess the need for sealants.
Notes:
- Direct Medicaid reimbursement allowed.

Pennsylvania 2007
Sec. 2 (Definitions), Sec. 11.9
Public Health Dental Hygiene Practitioner:
Dental hygienists who are certified as public health dental hygiene practitioners may provide care in a variety of public health settings without the supervision or prior authorization of a dentist.
Special requirements: Hygienist must have 3,600 hours experience and liability insurance. Hygienist must also complete 5 hours of continuing education in public health during each licensure period.
Services: Hygienist can provide educational, preventive, therapeutic, and intra-oral services, including complete prophylaxis and sealants, dental hygienists in the state are authorized to provide.

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Rhode Island 2006
Sec. 5-31.1-6.1
General Supervision:
Dental hygienists working under a dentist's general supervision can initiate dental hygiene treatment to residents of nursing facilities. Dental hygienists working in nursing facilities can treat patients, regardless of whether or not the patient is a patient of record, as long as documentation of services administered is maintained and necessary referrals for follow-up treatment are made.
Special Requirements: None.
Services: Hygienist can initiate dental hygiene services, including oral health screening assessments, prophylaxis, fluoride treatments, charting, and other duties delegable under general supervision.

South Carolina 2003
Sec. 40-15-110 (A) (10)
General Supervision:
Hygienists employed by, or contacted through, the Department of Health and Environment Control may provide services under general supervision that does not require prior examination by a dentist in settings such as schools or nursing homes.
Special Requirements: Hygienist must carry professional liability insurance.
Services: Hygienist employed by, or contacted through, the Department of Health and Environment Control may provide prophylaxis, fluorides, and sealants.

South Dakota 2011
Sec 36-6A-40
Collaborative practice was enacted, but the rules needed to implement are pending. Will enable a dental hygienist actively engaged in clinical practice for 2 of the last 3 years to enter into a collaborative agreement with a dentist to provide preventive and therapeutic services to a patient for up to 13 months before the dentist must evaluate the patient.
Services: *to be established in rules.*

Tennessee 2013
Sec. 63-5-109
Dental Hygienists may apply dental sealants or topical fluoride to the teeth of individuals in a setting under the direction of a state or local health department, without requiring an evaluation by a dentist prior to such application, under a protocol established by the state or a metropolitan health department.

Texas 2001
Sec. 262.1515
General Supervision:
Hygienist may provide services for up to 6 months without dentist seeing the patient. Services may be performed in school based health center, nursing facility, or community health center. Hygienist must refer the patient to a dentist following treatment and may not perform a second set of services until the patient has been examined by a dentist.
Special Requirements: Hygienist must have at least two years of experience.
Services: No limitations. Dentist must authorize services in writing.

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Vermont 2008
Rule 10.2
General Supervision Agreement:
Hygienist may provide services in a public or private school or institution under the supervision of a dentist via a general supervision agreement. The agreement authorizes the hygienist to provide services, agreed to between the dentist and the dental hygienist. The agreement does not require physical presence of the dentist but it stipulates that the supervising dentist review all patient records.
Special Requirements: Hygienist must have three years licensed clinical practice experience.
Services: Hygienist can provide sealants, fluoride varnish, prophylaxis and x-rays; periodontal maintenance is allowable to patients with mild periodontitis.

Virginia 2009
Sec. 54.1-2722
Remote Supervision:
Virginia Pilot Project seeks to assess the impact dental hygienists practicing in an expanded capacity under remote supervision have on increasing access to dental health care for underserved populations. Hygienist will refer patients without a dental provider to a dentist with the goal of establishing a dental home. Hygienists must enter into a remote supervision agreement with a licensed dentist and maintain regular, periodic communication – 14 day intervals- with the licensed dentist (protocol must be submitted to Department of Health).
Special Requirements: Hygienists must have two years of experience and must be employed by the Department of Health.
Services: Hygienists can provide initial examination of teeth and surrounding areas, prophylaxis, scaling, sealants, topical fluoride, education services, assessment and screening.

Washington 2007
Sec. 18.29.056
Off-Site Supervision:
Hygienist can provide care to patients in "senior centers" if hygienist has a written agreement with dentist to provide "off-site" supervision.
Special Services: Hygienist must have two years of clinical experience. Hygienist must collect patient data to submit to the Department of Health.
Services: Hygienist can provide prophylaxis, root planing, curettage, and apply preventive agents.

Washington 2001
Sec. 18.29.220
Public Health Dental Hygienist:
Dental hygienists who are school endorsed may assess for and apply sealants and fluoride varnishes and perform prophylaxis in community-based sealant programs carried out in schools.
Special Requirements: Sealant/Fluoride Varnish Endorsement from Department of Health. Hygienist must submit data to the Department of Health concerning patient demographics, treatment, reimbursement, referrals, etc.

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Washington 1984
Sec. 18.29.056
Unsupervised Practice:
Unsupervised practice in hospitals, nursing homes, home health agencies, group homes (for the elderly, handicapped or youth), state institutions under department of health and human services, jails, and public health facilities provided the hygienist refers patient to a dentist for dental treatment and needed care.
Special requirements: Hygienist must have two years clinical experience within the last five years.
Services: Hygienist can provide prophylaxis, application of typical preventive or prophylactic agents, polishing and smoothing restorations root planing, and curettage.
Notes:
- Direct Medicaid reimbursement allowed.

West Virginia 2008
Sec. 5-1-8.5
Public Health Dental Hygienist:
Hygienist may provide care in hospitals, schools, correctional facilities, jails, community clinics, long term care facilities, nursing homes, home health agencies, group homes, state institutions under the Department of Health and Human Resources, public health facilities, homebound settings and Accredited Dental Hygiene Education programs. Dentist must authorize hygienist to provide care (i.e. standing orders) but need not be present have previously seen patient.
Special Requirements: Hygienist must have two years and 3,000 hours of clinical experience and take six additional continuing education hours. Hygienist and dentist must submit annual written report of care to state board of dental examiners.
Services: Hygienist can provide patient education, nutritional counseling, oral screening with referral to dentist, apply fluoride, sealants, and offer a complete prophylaxis (pursuant to a collaborative agreement or written order.)

Wisconsin 2007
Sec. 447.06
The statute does not require the presence or supervision of a dentist in a public or private school, a dental or dental hygiene school or a facility owned by a local health department.
Special Requirements: None
Services: Hygienist can provide prophylaxis, root planing, screening, treatment planning, sealants and delegable duties.
Notes:
- Direct Medicaid reimbursement allowed.

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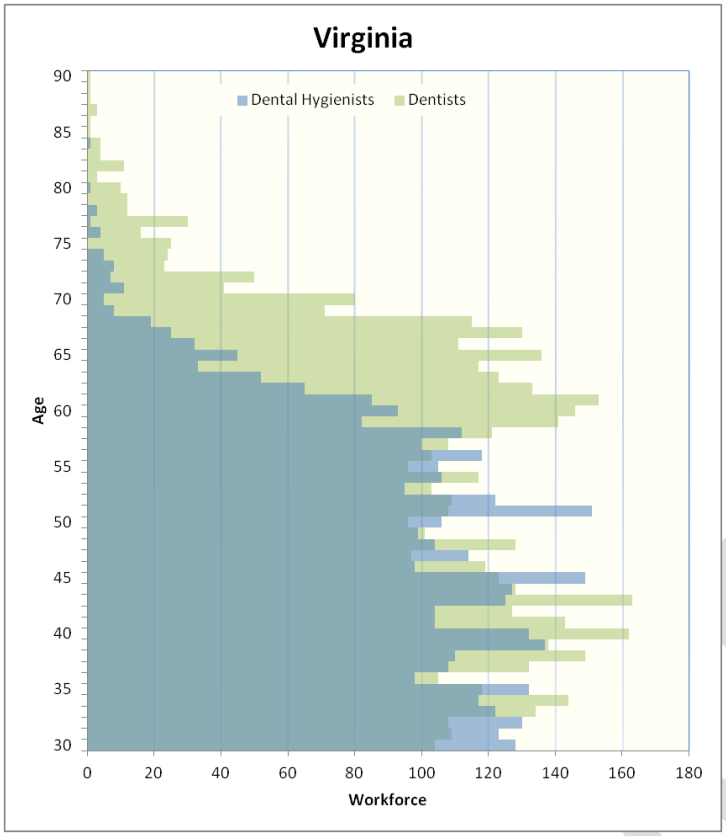
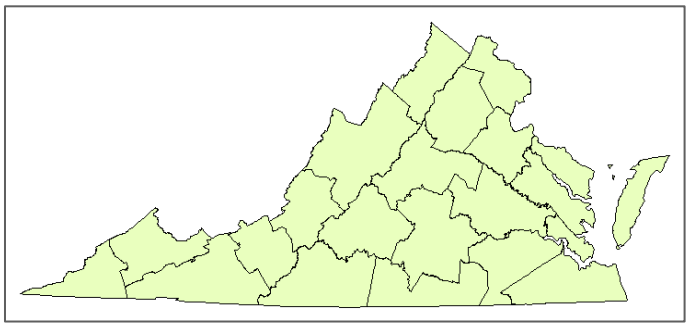
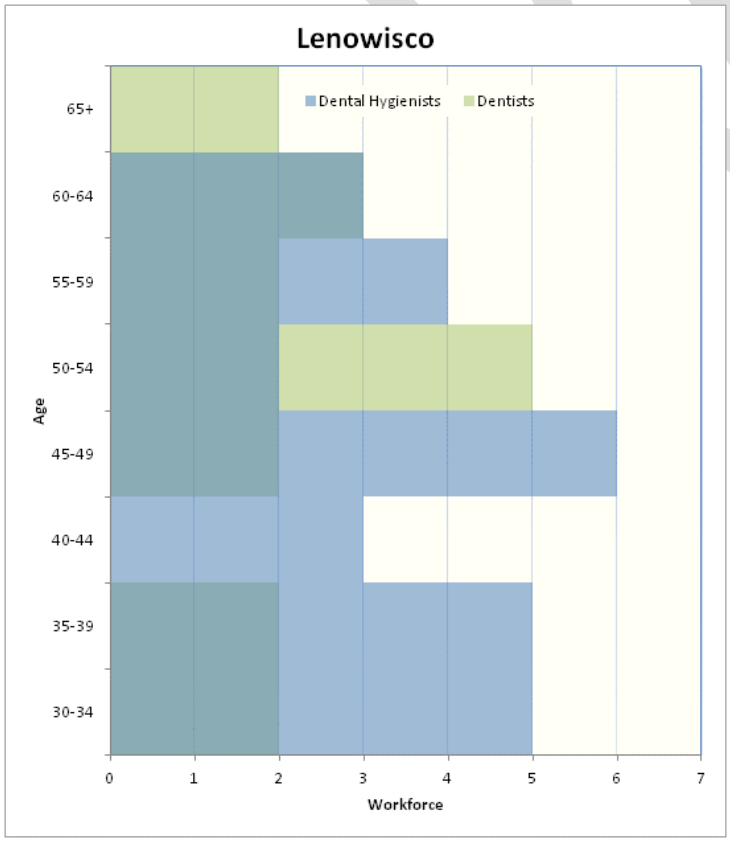
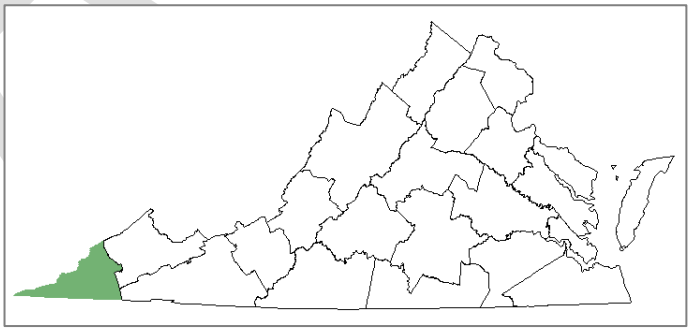


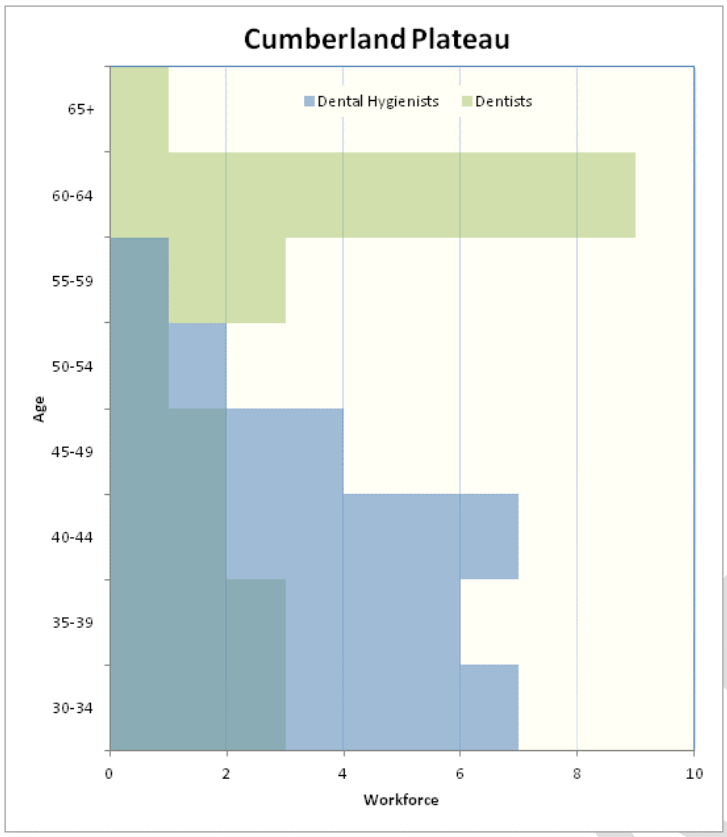


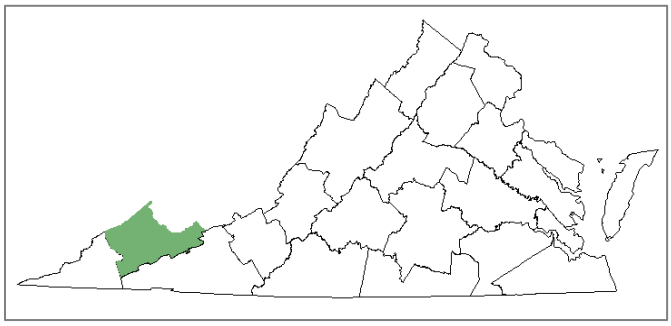
	Dental Hygienists	Dentists
All Ages		
% under 40	40%	26%
% 60+	11%	29%
30+ only		
% under 40	30%	24%
% 60+	13%	30%
Workforce		
Workforce	4,585	5,393
FTEs per 1,000 Residents	.37	0.56



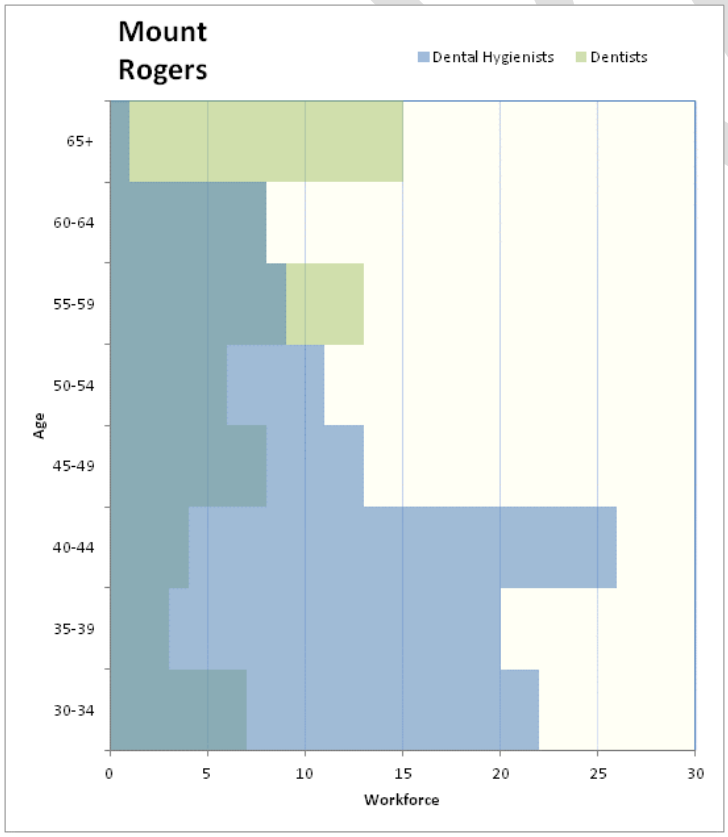


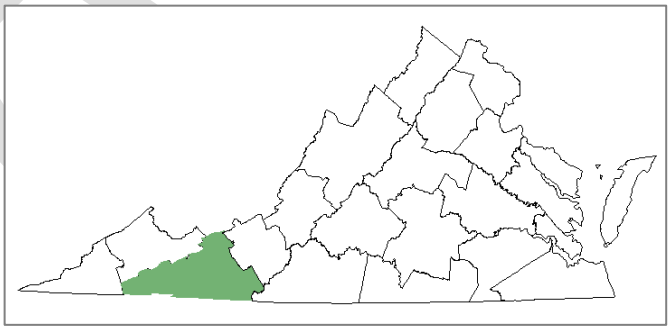
	Dental Hygienists	Dentists
All Ages		
% under 40	38%	26%
% 60+	10%	26%
30+ only		
% under 40	36%	22%
% 60+	11%	28%
Workforce		
Workforce	29	19
FTEs per 1,000 Residents	.19-.22	.19-.26



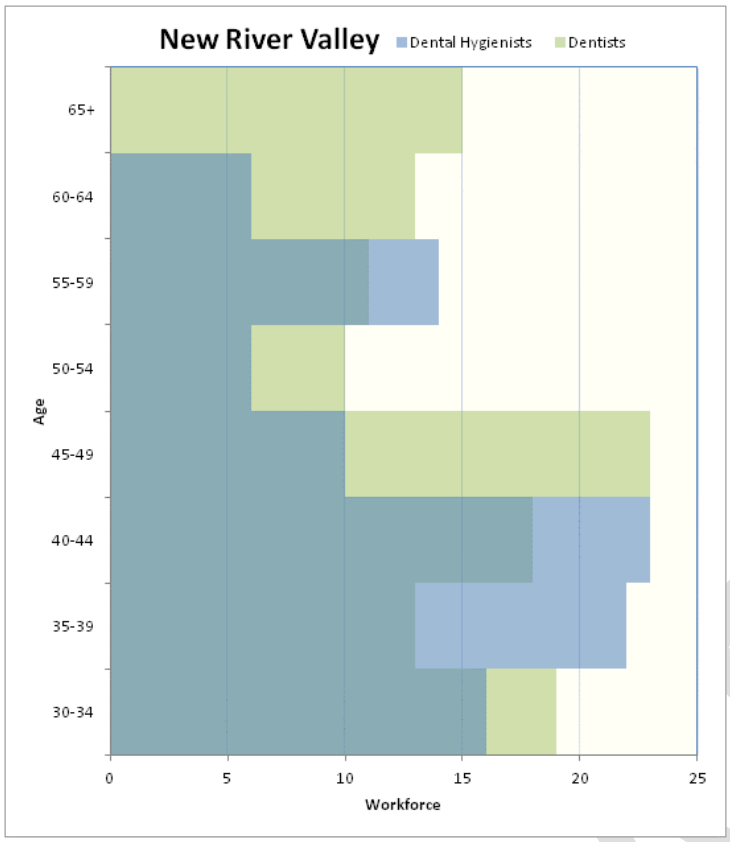


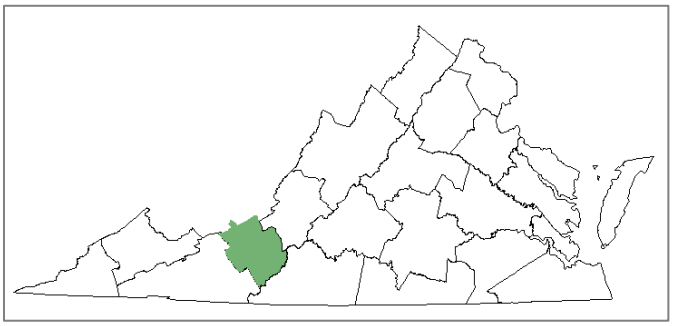
	Dental Hygienists	Dentists
All Ages		
% under 40	55%	25%
% 60+	0%	42%
30+ only		
% under 40	48%	25%
% 60+	0%	42%
Workforce		
Workforce	31	24
FTEs per 1,000 Residents	.12-.17	.19-.26



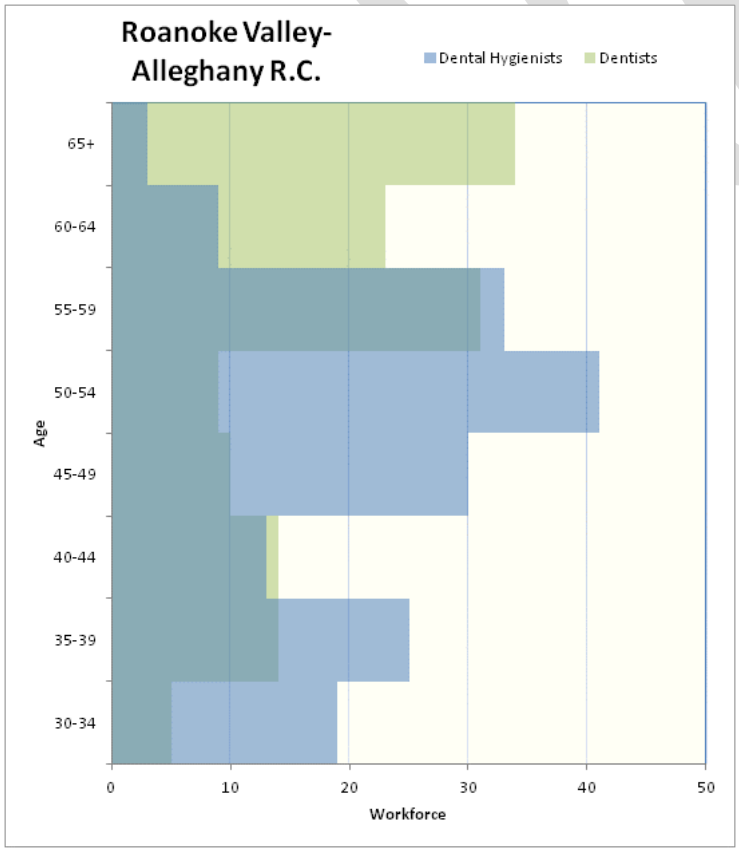


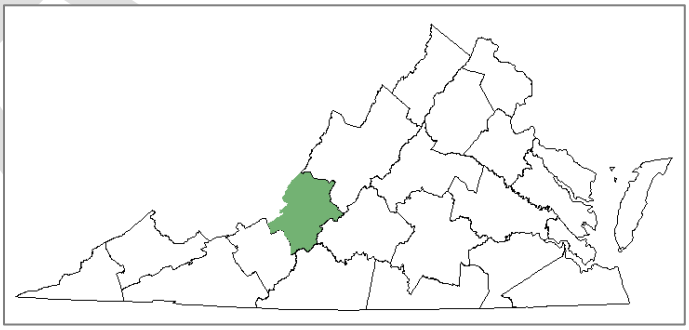
	Dental Hygienists	Dentists
All Ages		
% under 40	48%	18%
% 60+	7%	35%
30+ only		
% under 40	38%	16%
% 60+	8%	36%
Workforce		
Workforce	130	66
FTEs per 1,000 Residents	.41-.48	.31-.33



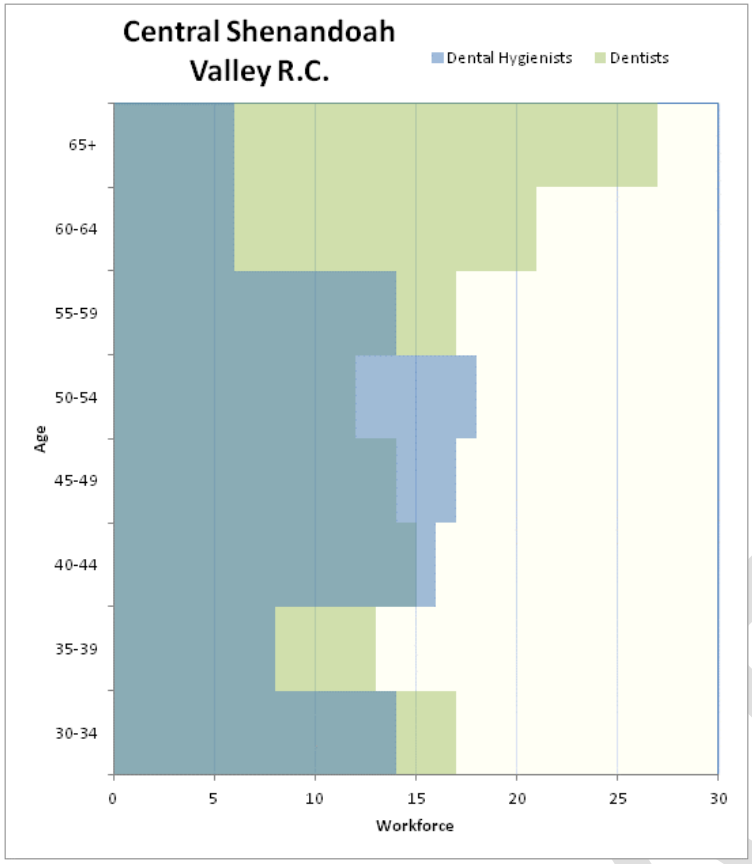


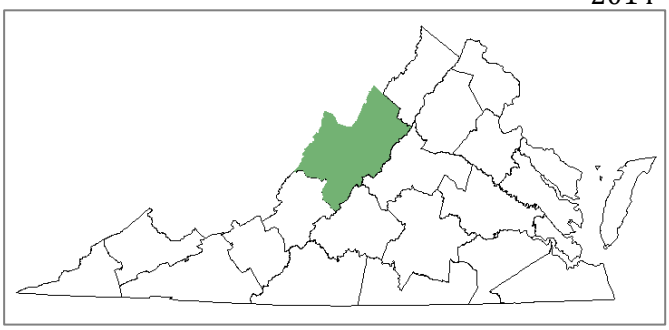
	Dental Hygienists	Dentists
All Ages		
% under 40	49%	31%
% 60+	5%	22%
30+ only		
% under 40	39%	26%
% 60+	6%	23%
Workforce		
Workforce	116	130
FTEs per 1,000 Residents	.41-.48	.52-.59



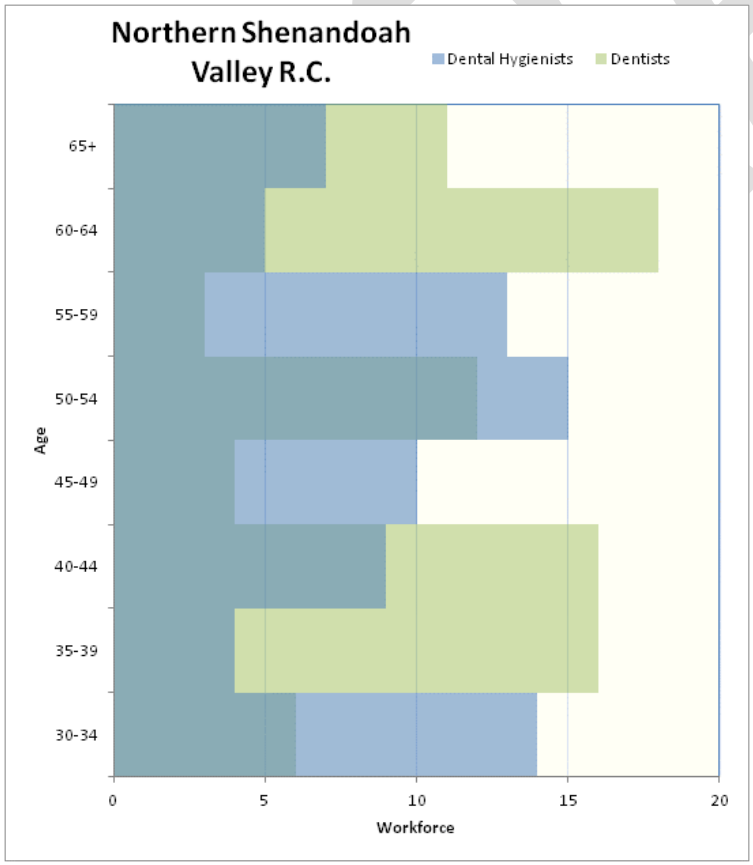


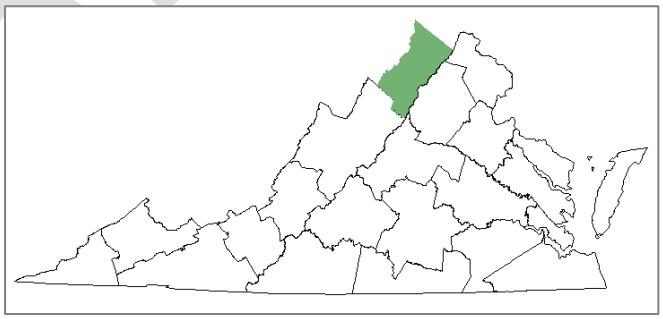
	Dental Hygienists	Dentists
All Ages		
% under 40	34%	19%
% 60+	6%	38%
30+ only		
% under 40	25%	14%
% 60+	7%	41%
Workforce		
Workforce	195	149
FTEs per 1,000 Residents	.41-.48	.44-.47



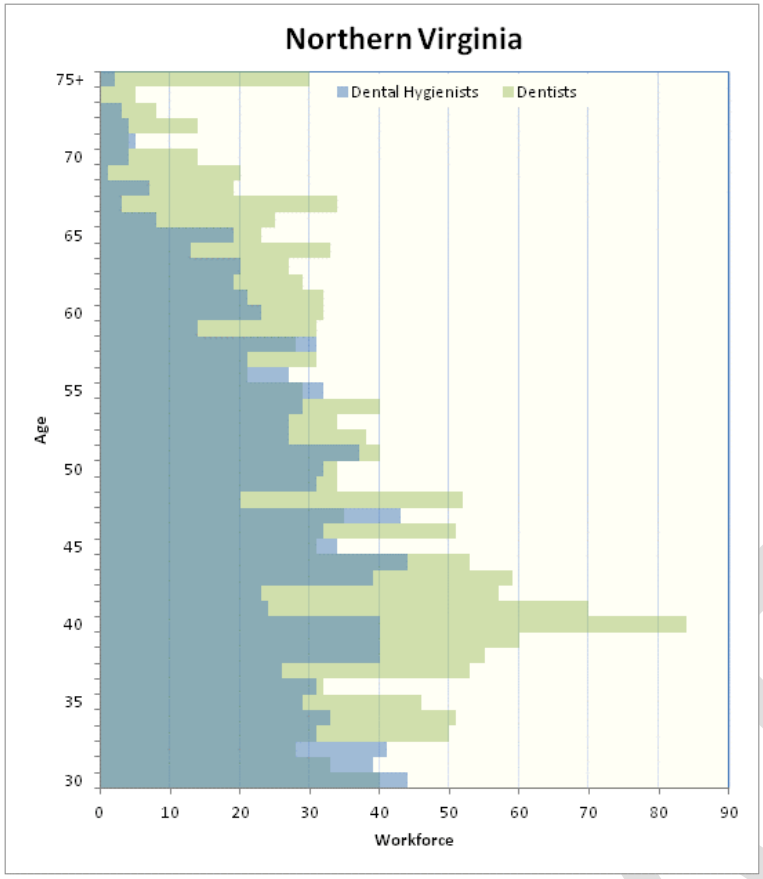


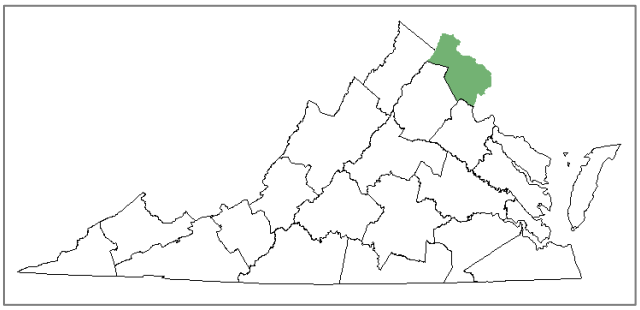
	Dental Hygienists	Dentists
All Ages		
% under 40	34%	19%
% 60+	6%	38%
30+ only		
% under 40	25%	14%
% 60+	7%	41%
Workforce		
Workforce	195	149
FTEs per 1,000 Residents	.29-.33	.37-.41



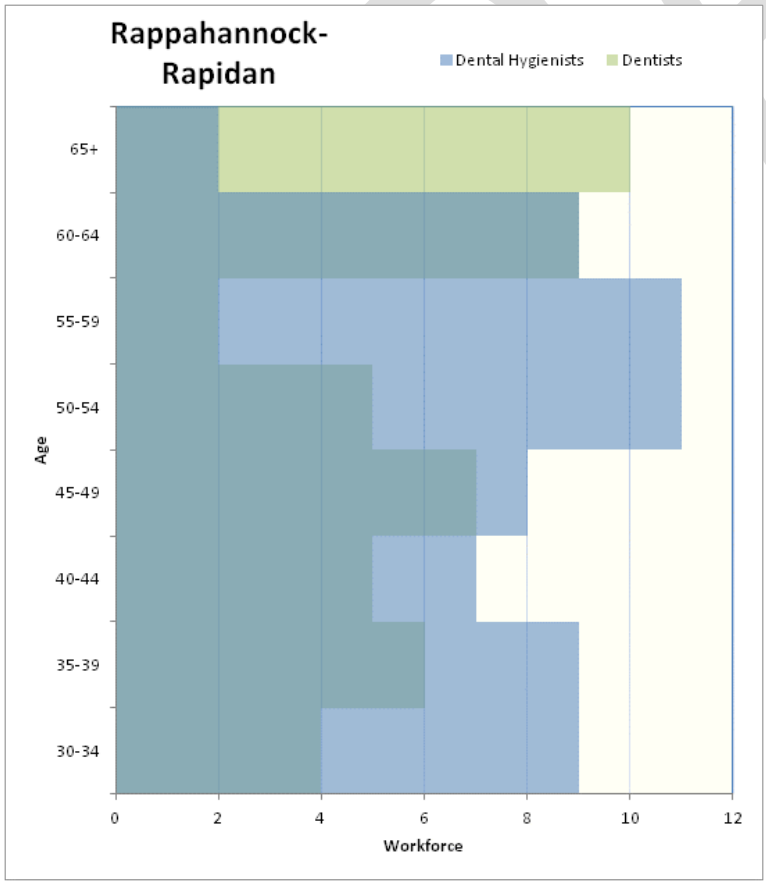


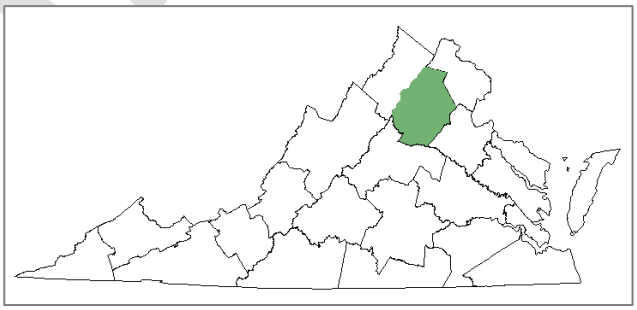
	Dental Hygienists	Dentists
All Ages		
% under 40	34%	26%
% 60+	13%	34%
30+ only		
% under 40	23%	26%
% 60+	16%	34%
Workforce		
Workforce	90	86
FTEs per 1,000 Residents	.29-.33	.31-.33



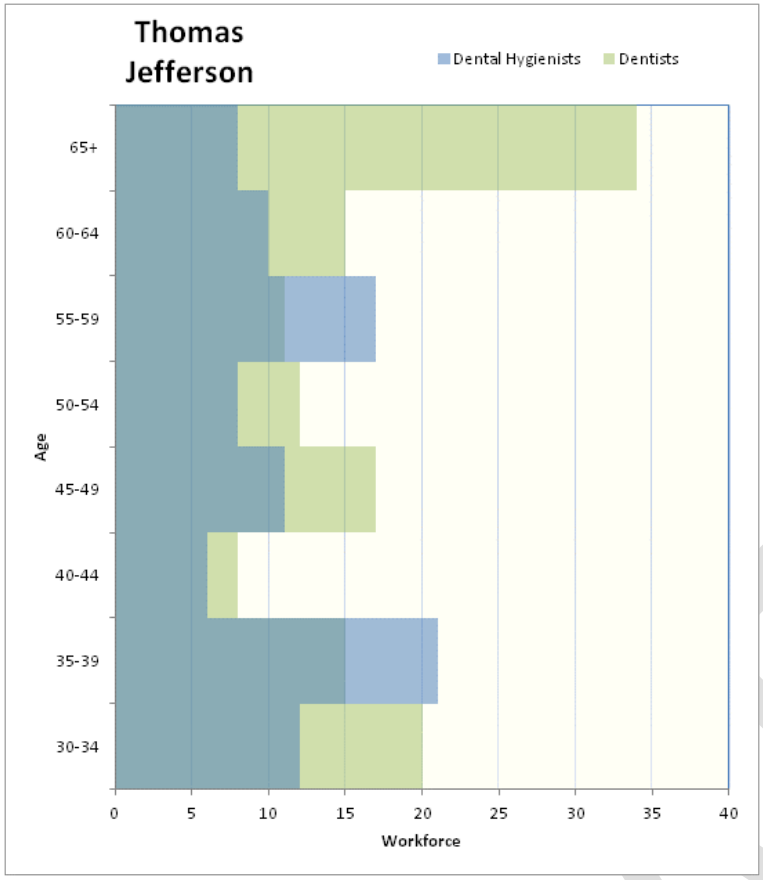


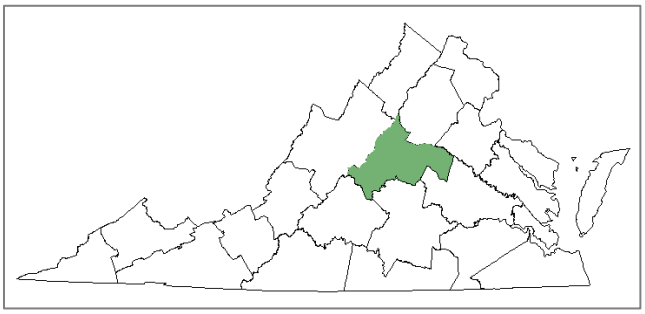
	Dental Hygienists	Dentists
All Ages		
% under 40	40%	29%
% 60+	12%	21%
30+ only		
% under 40	32%	27%
% 60+	14%	21%
Workforce		
Workforce	1,268	1,686
FTEs per 1,000 Residents	.29-.33	.52-.59



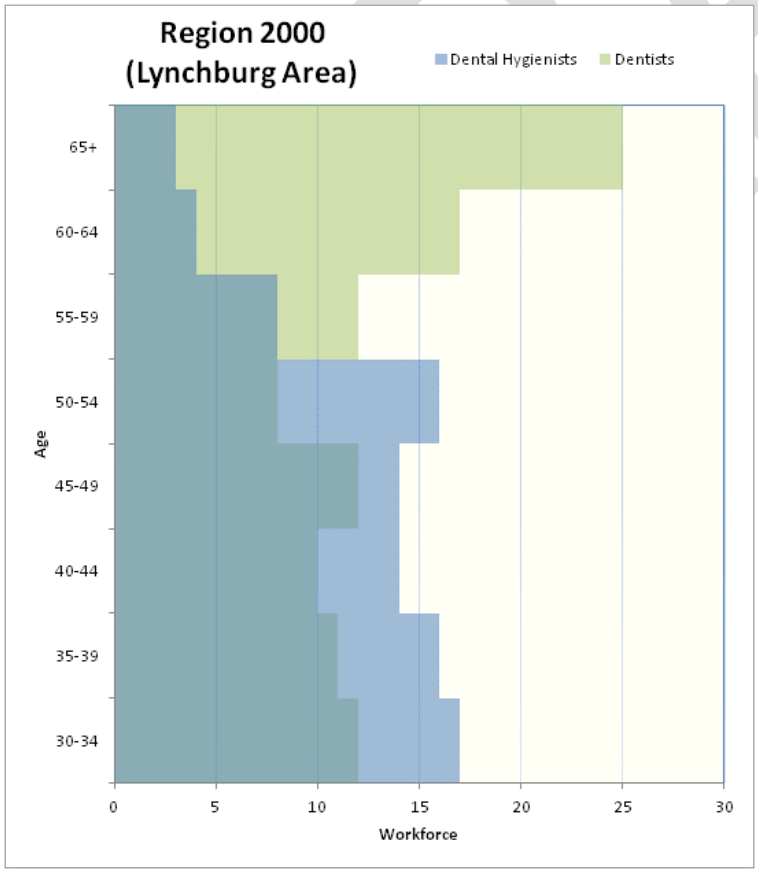


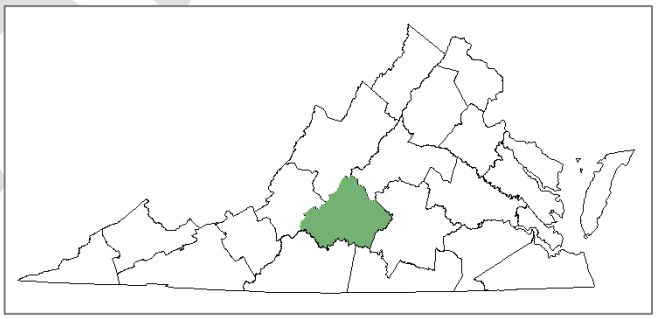
	Dental Hygienists	Dentists
All Ages		
% under 40	36%	24%
% 60+	15%	38%
30+ only		
% under 40	27%	21%
% 60+	17%	40%
Workforce		
Workforce	75	50
FTEs per 1,000 Residents	.26-.28	.19-.26



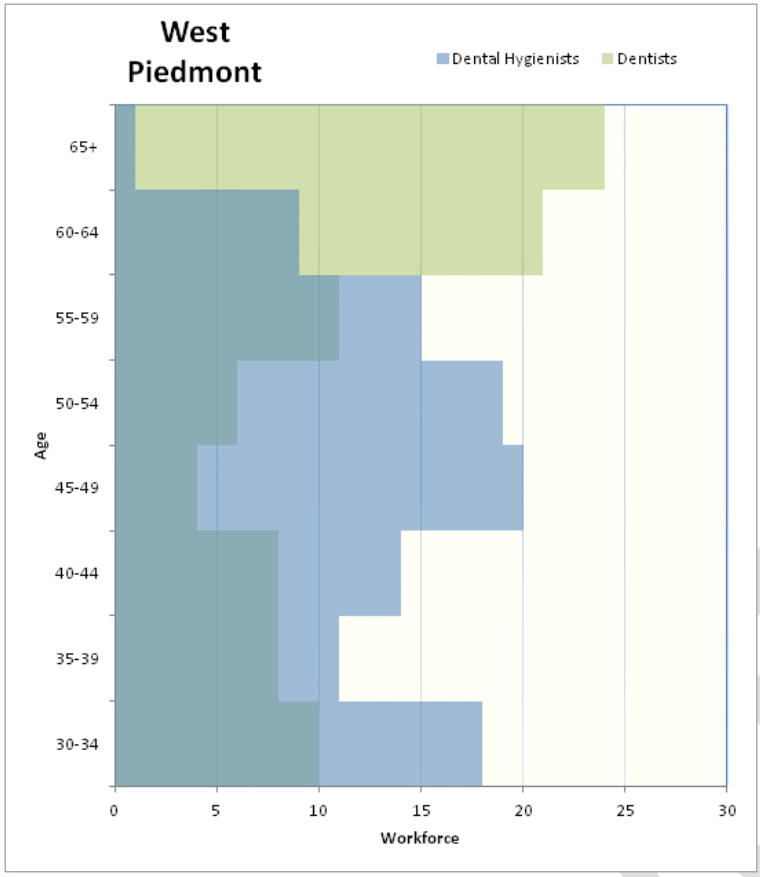


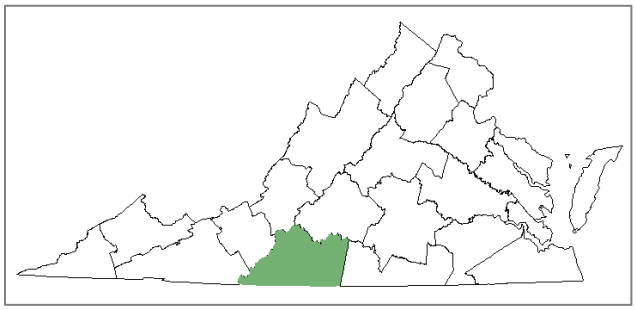
	Dental Hygienists	Dentists
All Ages		
% under 40	52%	31%
% 60+	14%	35%
30+ only		
% under 40	35%	27%
% 60+	19%	37%
Workforce		
Workforce	125	140
FTEs per 1,000 Residents	.29-.33	.52-.59



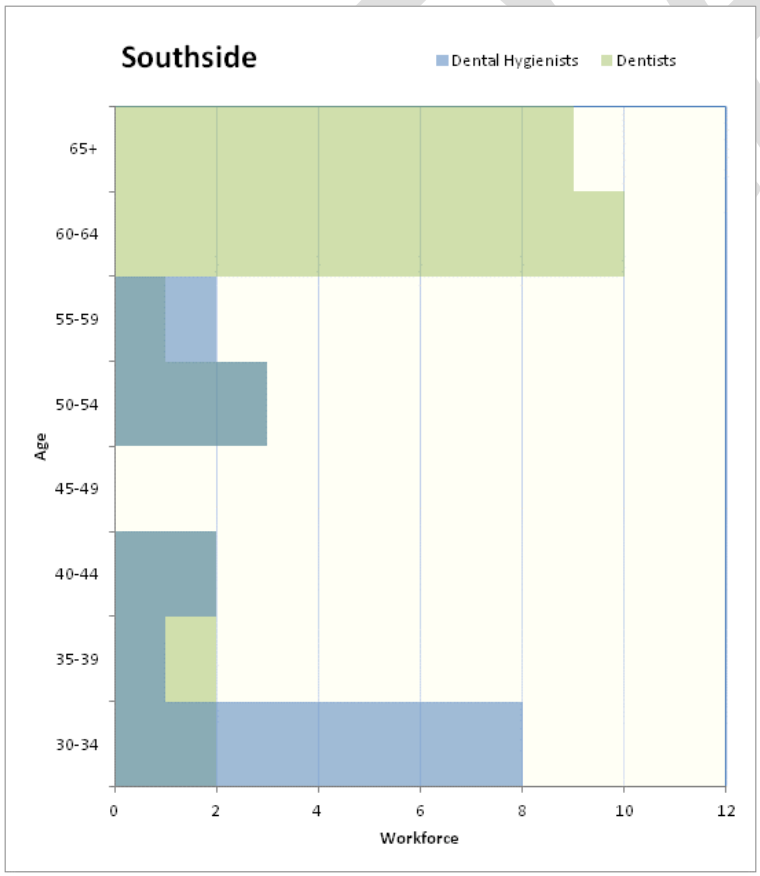


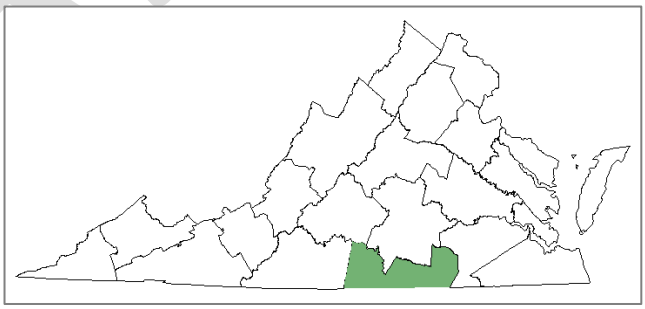
	Dental Hygienists	Dentists
All Ages		
% under 40	43%	23%
% 60+	7%	39%
30+ only		
% under 40	36%	21%
% 60+	8%	39%
Workforce		
Workforce	104	109
FTEs per 1,000 Residents	.19-.22	.37-.41



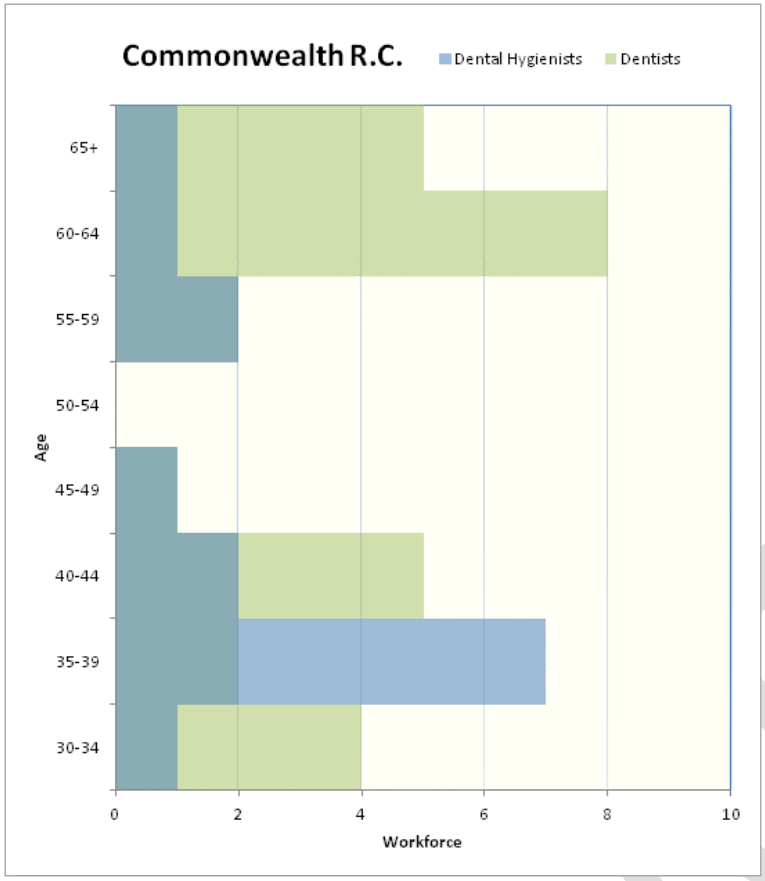


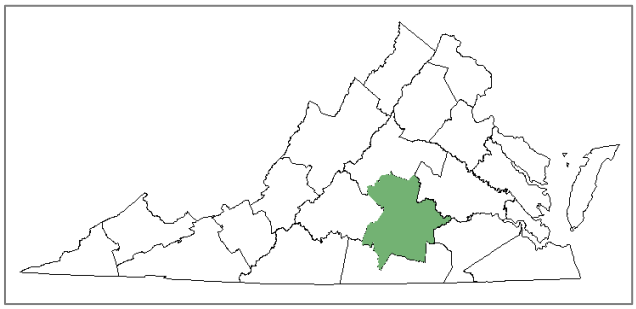
	Dental Hygienists	Dentists
All Ages		
% under 40	35%	22%
% 60+	8%	47%
30+ only		
% under 40	27%	20%
% 60+	9%	49%
Workforce		
Workforce	120	95
FTEs per 1,000 Residents	.29-.33	.31-.33



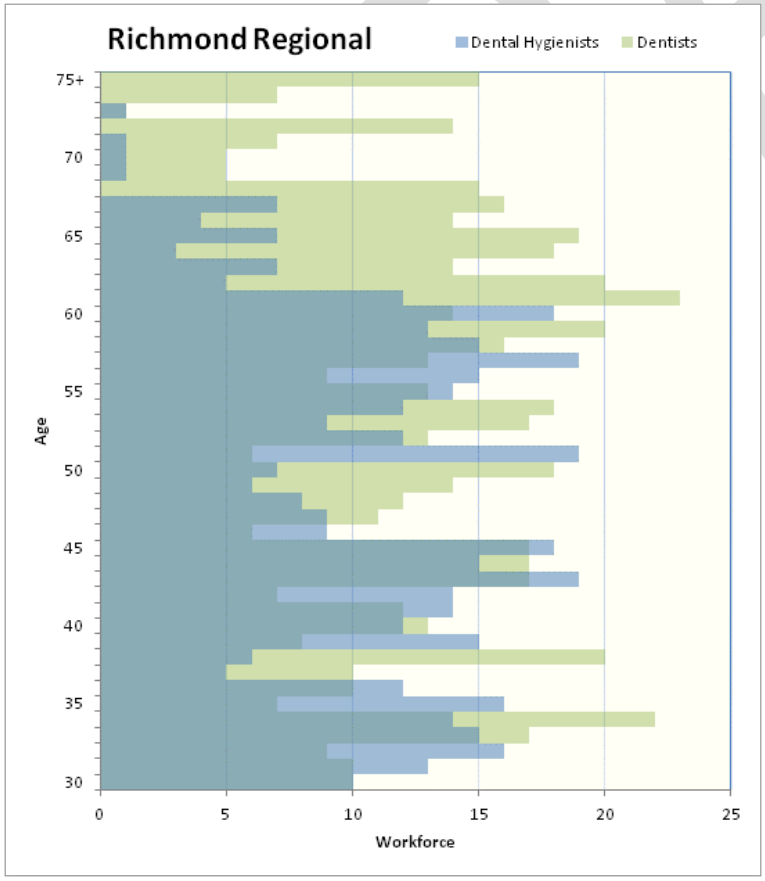


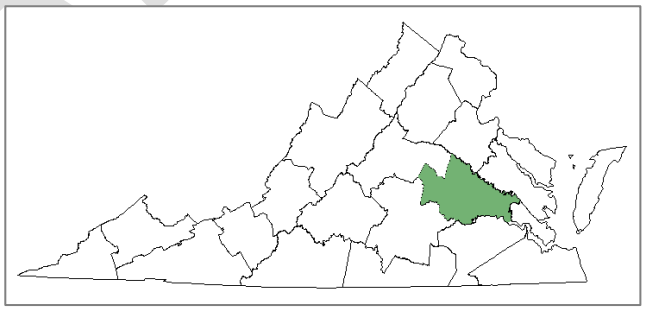
	Dental Hygienists	Dentists
All Ages		
% under 40	59%	19%
% 60+	0%	61%
30+ only		
% under 40	56%	14%
% 60+	0%	66%
Workforce		
Workforce	17	31
FTEs per 1,000 Residents	.12-.17	.31-.33



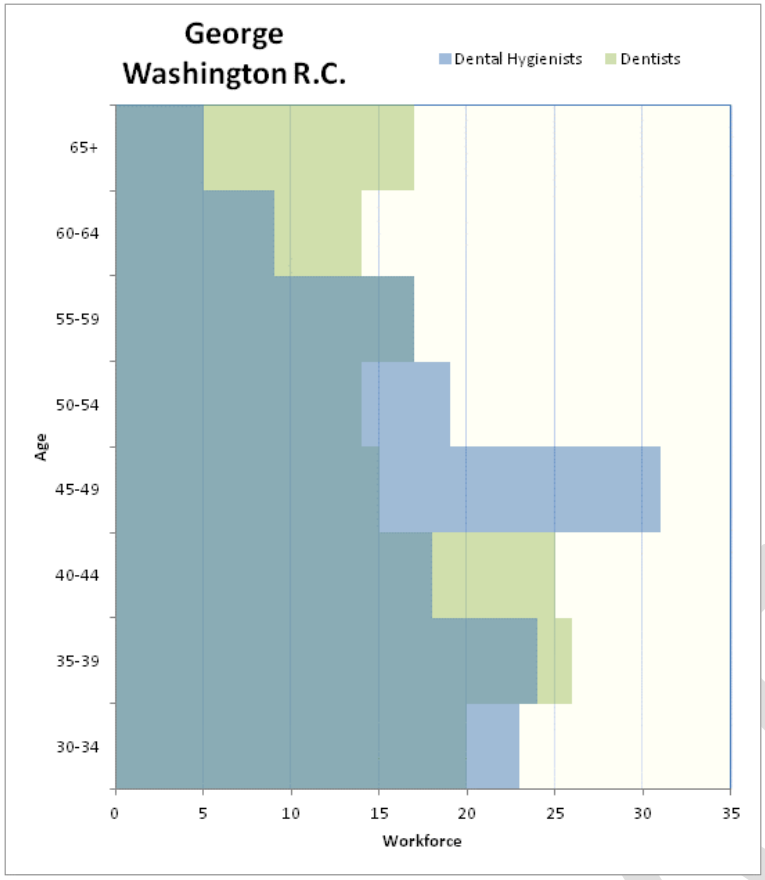


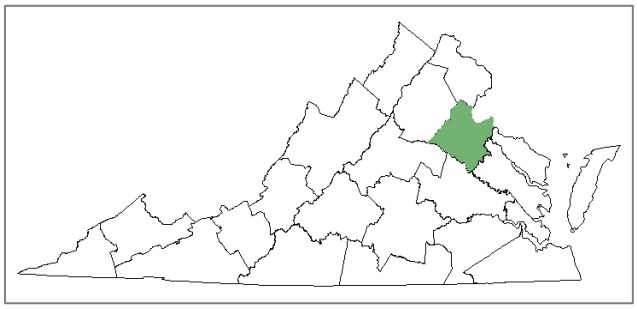
	Dental Hygienists	Dentists
All Ages		
% under 40	61%	22%
% 60+	11%	48%
30+ only		
% under 40	53%	22%
% 60+	13%	48%
Workforce		
Workforce	18	27
FTEs per 1,000 Residents	.12-.17	.19-.26



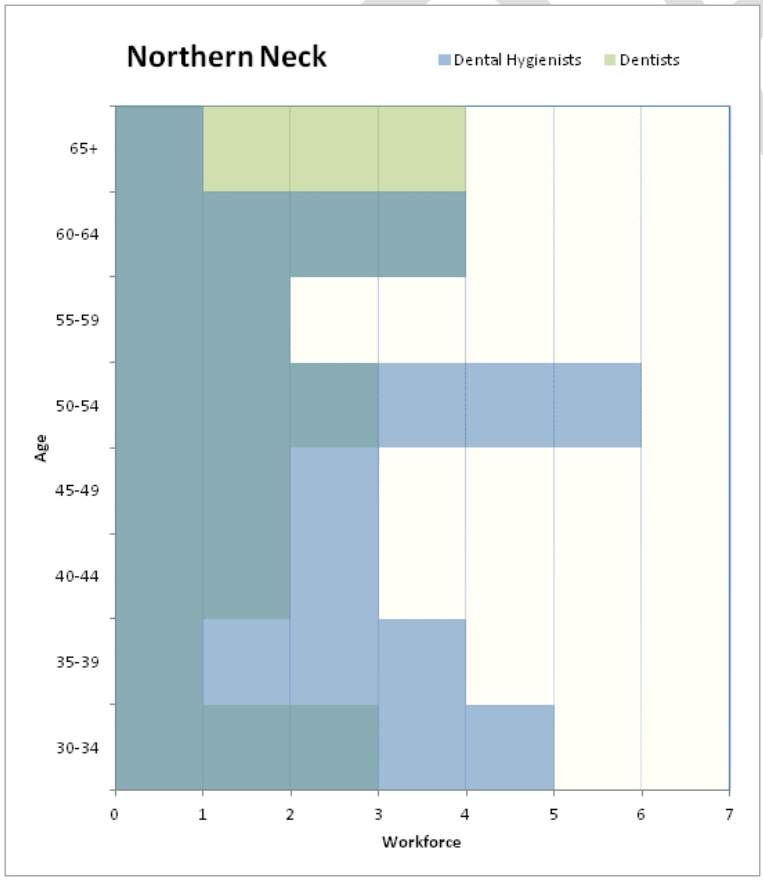


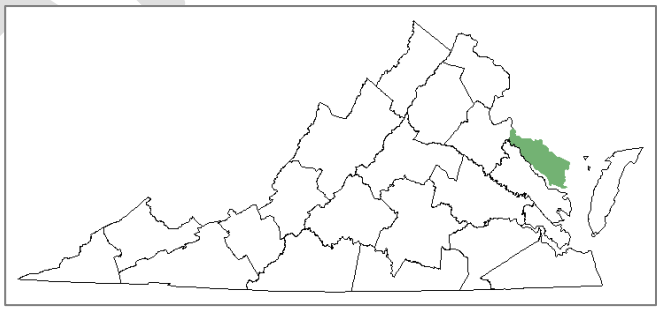
	Dental Hygienists	Dentists
All Ages		
% under 40	37%	24%
% 60+	13%	33%
30+ only		
% under 40	27%	21%
% 60+	15%	35%
Workforce		
Workforce	519	628
FTEs per 1,000 Residents	.29-.33	.52-.59



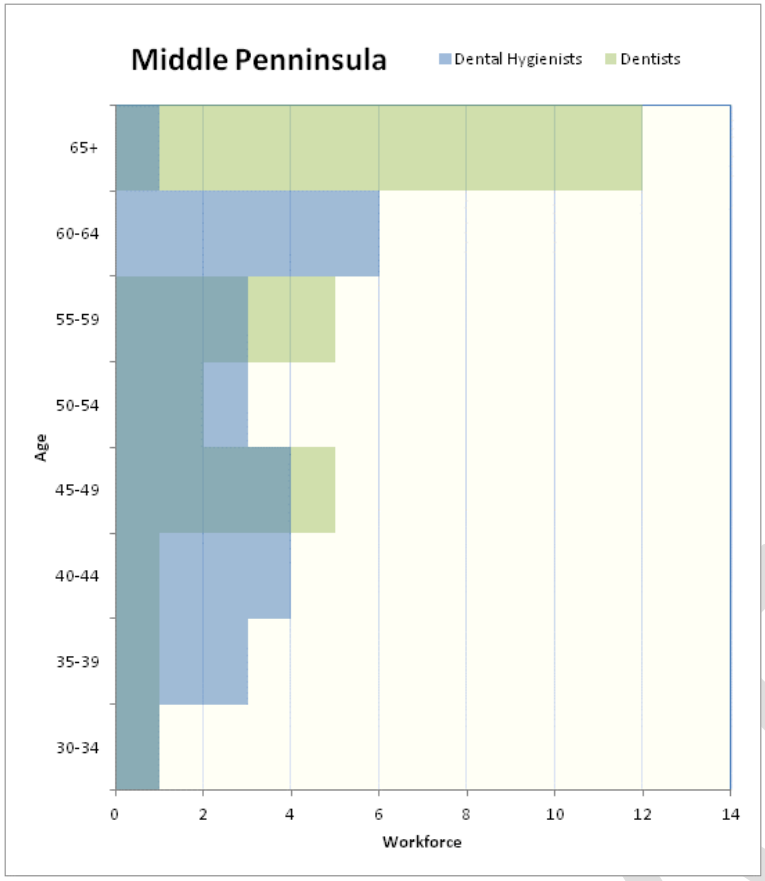


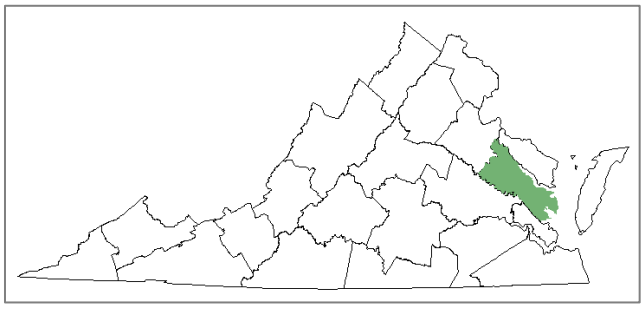
	Dental Hygienists	Dentists
All Ages		
% under 40	36%	33%
% 60+	9%	20%
30+ only		
% under 40	32%	31%
% 60+	10%	21%
Workforce		
Workforce	155	152
FTEs per 1,000 Residents	.26-.28	.37-.41



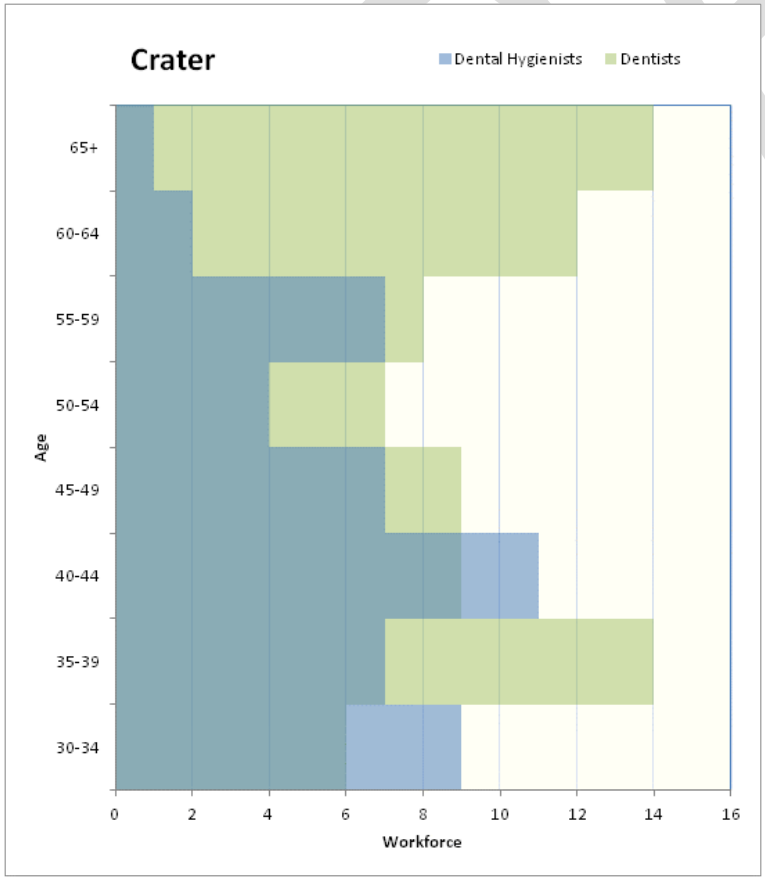


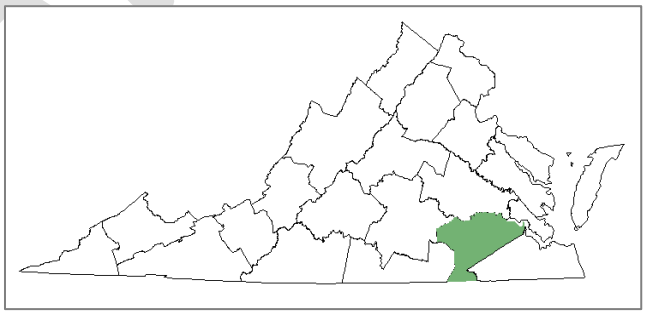
	Dental Hygienists	Dentists
All Ages		
% under 40	42%	23%
% 60+	15%	36%
30+ only		
% under 40	32%	19%
% 60+	18%	38%
Workforce		
Workforce	33	22
FTEs per 1,000 Residents	.41-.48	.44-.47



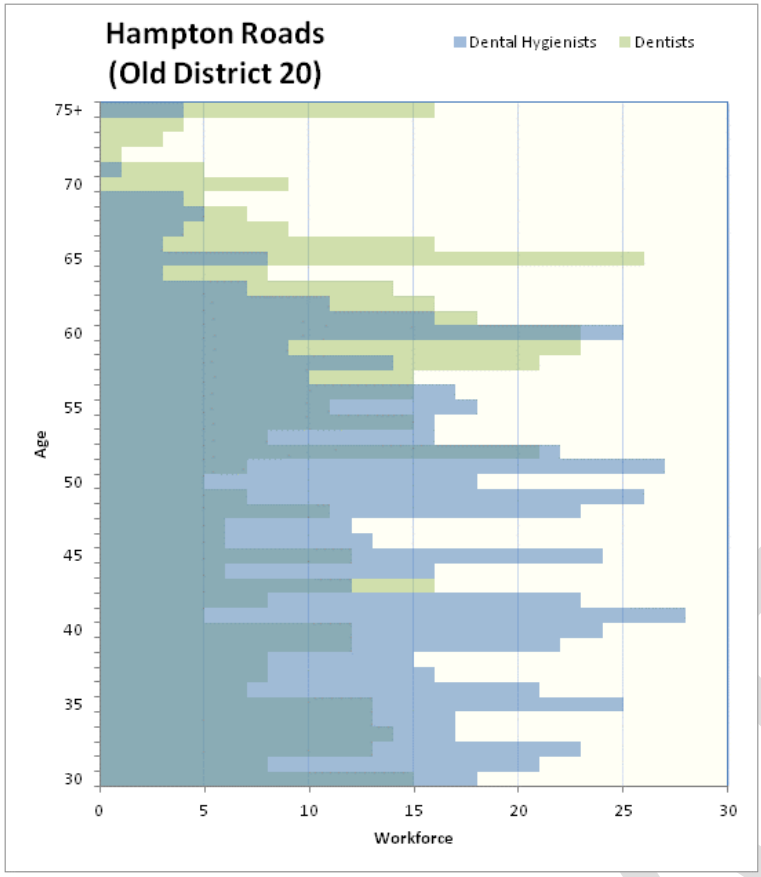


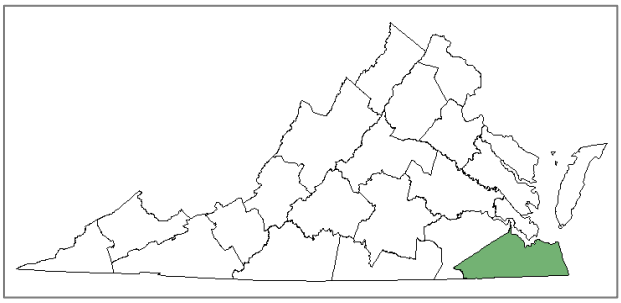
	Dental Hygienists	Dentists
All Ages		
% under 40	19%	7%
% 60+	27%	44%
30+ only		
% under 40	16%	7%
% 60+	28%	44%
Workforce		
Workforce	26	27
FTEs per 1,000 Residents	.19-.22	.31-.33





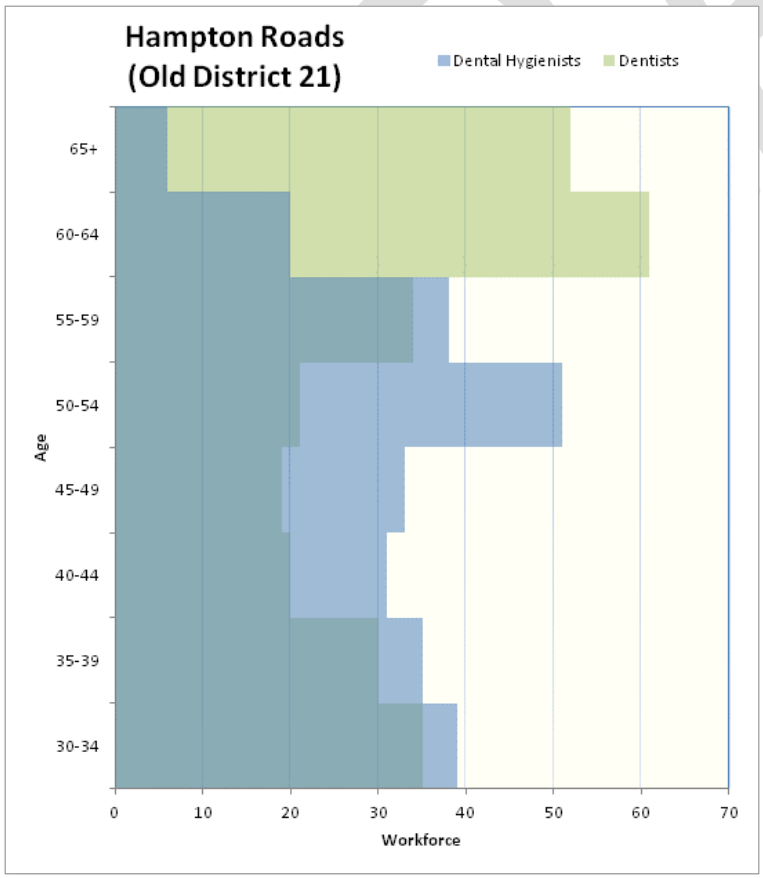
	Dental Hygienists	Dentists
All Ages		
% under 40	47%	31%
% 60+	5%	31%
30+ only		
% under 40	33%	25%
% 60+	6%	33%
Workforce		
Workforce	60	85
FTEs per 1,000 Residents	.26-.28	.44-.47

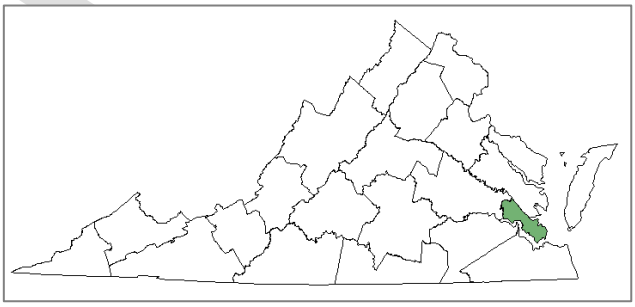




	Dental Hygienists	Dentists
All Ages		
% under 40	41%	23%
% 60+	12%	34%
30+ only		
% under 40	30%	21%
% 60+	14%	35%
Workforce		
Workforce	773	535
FTEs per 1,000 Residents	.41-.48*	.44-.47*

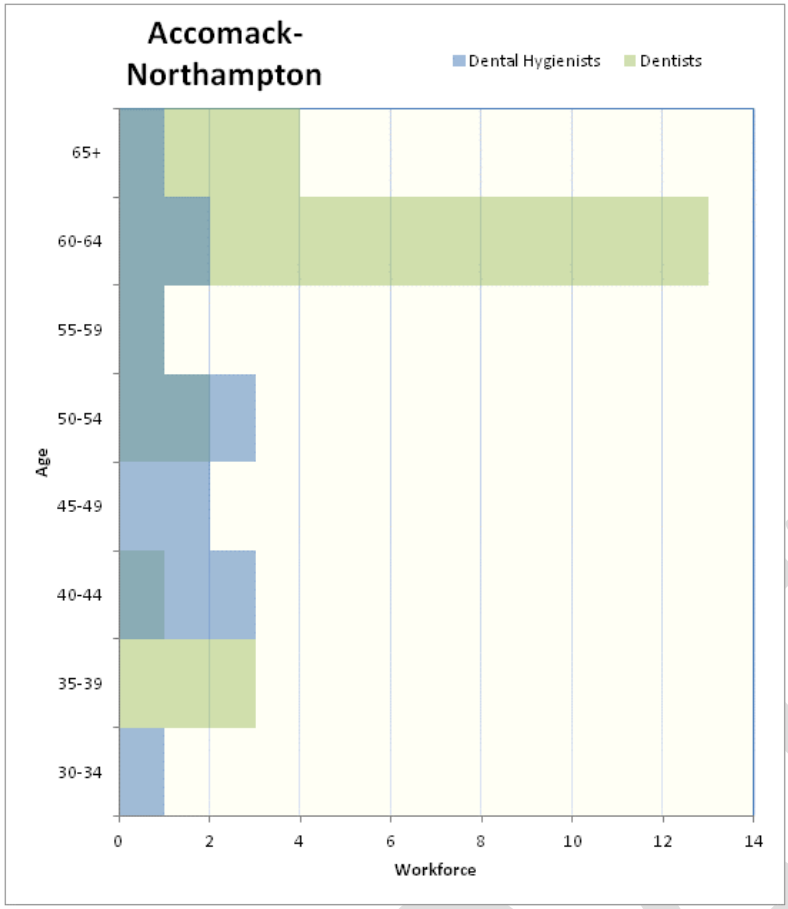
**Reported for both HRVA Districts combined*

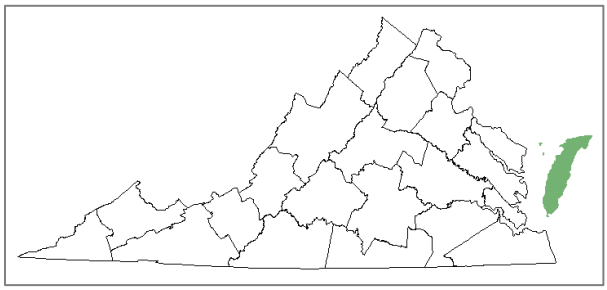




	Dental Hygienists	Dentists
All Ages		
% under 40	39%	26%
% 60+	9%	40%
30+ only		
% under 40	29%	24%
% 60+	10%	42%
Workforce		
Workforce	295	281
FTEs per 1,000 Residents	.41-.48*	.44-.47*

**Reported for both HRVA Districts combined*





	Dental Hygienists	Dentists
All Ages		
% under 40	8%	13%
% 60+	23%	71%
30+ only		
% under 40	8%	13%
% 60+	23%	71%
Workforce		
Workforce	13	24
FTEs per 1,000 Residents	.19-.22	.44-.47

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