Final Report on Services Provided by Virginia Department of Health (VDH) Dental Hygienists Pursuant to a Practice Protocol in Lenowisco, Cumberland Plateau, and Southside Health Districts

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Executive Summary

In 2009, the Virginia General Assembly passed legislation to revise § 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia. The changes to the practice of dental hygiene pertain specifically to those hygienists employed by the Virginia Department of Health (VDH) who work in the Cumberland Plateau, Lenowisco, and Southside Health Districts, all dentally underserved areas. These practice changes are in effect through July 1, 2012, due to additional legislation in the 2011 Session.

This legislative action has enabled a small cohort of dental hygienists to provide preventive dental services in selected settings without the general or direct supervision of a dentist. This effort has improved access to preventive dental services for those at highest risk of dental disease, as well as reduced barriers and costs for dental care for low-income individuals.

In July 2009, a committee was formed to develop the new practice protocol comprised of representatives from VDH, the Virginia Board of Dentistry, the Virginia Dental Association, and the Virginia Dental Hygienists' Association. Definitions and guidelines for the new remote supervision practice protocol were drafted by the committee, approved by the State Health Commissioner, and provided to the Virginia Board of Dentistry in 2009 and again in 2010 after minor revisions. The committee defined remote supervision to mean 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 on-site with the dental hygienist when dental hygiene services are delivered." The current Protocol for Virginia Department of Health Dental Hygienists to Practice in an Expanded Capacity under Remote Supervision by Public Health Dentists is included as Appendix C.

This report documents the services provided by a total of six full- or part-time dental hygienists who have worked under remote supervision in these three districts. Because of staff changes, the hygienists have not all worked continuously during the reporting period (September 2009 to June 2011). By comparison, in 2011 there are currently 4,198 dental hygienists licensed in Virginia who have addresses in the state.

Because VDH received funding for an Oral Health Workforce Grant from the U.S. Health Resources and Services Administration for many of the dental hygiene positions in the three districts, a majority of prevention services provided by VDH using the remote supervision protocol are through newly established school-based dental sealant programs in keeping with grant objectives. Dental sealant programs are evidence-based and cost-effective means to reduce the dental disease burden of a population. The hygienists were also able to provide many other additional preventive services for the individuals in these communities under existing practice protocols, including screenings, fluoride varnish, education, and referrals.

During the 2010-2011 school year, 64 of the 75 (85%) targeted elementary and middle schools in the three districts participated in the school-based sealant program. Forty-one of these schools participated in 2009-2010, and 23 additional schools participated in 2010-2011. The school-based sealant program specifically targeted children enrolled in the National School Lunch Program in these schools. Over 1,500 children returned a permission form to receive a screening by a dental hygienist; an average response rate of 19%.

Of the 1,514 children screened, 59% received dental sealants on permanent molar teeth. A total of 3,186 permanent molar teeth were sealed for an average of 3.6 sealants per child. During the two-year period, the dental hygienists referred 722 children (48%) from the sealant program to a dentist for evaluation or treatment for fillings, root canals, and/or extractions. Of the 248 children referred during the first year of the program, follow-up status is available for 81. As of this report, 23 of these children (28%) had all of their treatment needs completed.

The cost calculated per child to apply 3.6 sealants was 25% more under general supervision than under remote supervision ($86.76 vs. $69.35). On average, the cost per sealant was $24.10 under general supervision and $19.26 under remote supervision. According to the American Dental Association Fee Schedule for the South Atlantic Region, the average charge in private dental offices is $44.25 (range $30.00 to $64.00) for a dental sealant.

In addition to the sealant programs provided under the pilot remote supervision protocol, preventive services were provided under existing practice protocols in the target health districts. These include the fluoride varnish program in Special Supplemental Nutrition Program for Women, Infants and Children (WIC) clinics; dental education programs; and a newly developed referral program that uses home visitors. Screenings and fluoride varnish application were provided for over 1,700 infants and young children; 1,263 of these children were referred to a dentist to establish a dental home. The dental hygienists provided dental health education to 13,105 individuals in settings such as schools and Head Start centers, as well as professional trainings for health providers. The dental hygienists also worked with local home visiting programs in the Cumberland Plateau and Lenowisco Health Districts. These specially trained home visitors provided care coordination for families that included assistance with obtaining a dental home, making and keeping dental appointments, and oral health education. In 2011, an oral health home visiting program was developed in the Southside District utilizing a dental assistant. As of June 30, 2011, 422 high-risk children and pregnant women in the three districts had received home visiting services.

As this report indicates, the remote supervision model offers the potential of an alternative method of delivery for safety net dental program services and increased access for underserved populations. Increasing availability to preventive services such as sealants and fluoride has been proven to significantly reduce the dental disease burden, which is a priority need for those populations at highest risk. With an aging public health workforce and difficulties in recruiting dentists into safety net positions, the remote

supervision model could offer an alternative for VDH programs as dentists retire and cannot be replaced. Preventive services could be provided to more individuals at a lower personnel cost, with referrals to public health dentists primarily for treatment services from a greater geographic area. The potential for program sustainability improves as costs for delivering services are reduced with this model compared to those provided under general supervision. The remote supervision protocol has also proven successful in increasing the ability of VDH to successfully compete for federal grant funding for staff to work under this model.

Therefore, the recommendations regarding the future of the remote supervision practice protocol for VDH dental hygienists are as follows:

- Extend the provisions in § 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia for one year (to expire July 1, 2013) as an exemption to the existing regulations for the practice of dentistry and dental hygiene. This provides for the continuation of remote supervision in the three existing health districts (Cumberland Plateau, Lenowisco and Southside).

- Expand the above provision to include additional VDH health districts with adequate resources (e.g., staff and funding) to provide care to individuals who qualify for services according to VDH eligibility guidelines**.** Determine the need, if any, for limiting additional VDH clinics operating under this protocol to dental Health Professional Shortage Areas (HPSA), ensuring that these clinics can continue with the program for the entire extended period (to expire July 1, 2013).

- Consider a statutory change in § 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia to make this protocol within the scope of practice by July 1, 2013.

- Maintain the VDH committee for an annual revision and/or review of the protocol.

- Explore options for increasing participation in programs as well as increasing the number of children with dental treatment completed.

Overview

Language was passed in the 2009 Virginia General Assembly Session to revise § 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia. This legislation pertained to those hygienists employed by the Virginia Department of Health (VDH) who work in selected dentally underserved areas. An initial report was submitted to the General Assembly in 2010 as "RD327 – Report of Services Provided by Virginia Department of Health Dental Hygienists Pursuant to a Practice Protocol in the Cumberland Plateau, Lenowisco, and Southside Health Districts"[1]. The 2011 General Assembly passed legislation that extended the practice provision until July 1, 2012 (Appendix A).

Tremendous strides have been made in the reduction of tooth decay among many Virginians over the past fifty years, primarily due to water fluoridation, but the decline in disease prevalence and severity has not been distributed uniformly across all segments of the population. Race and socioeconomic disparities continue to be predictors of tooth decay, and geographic considerations affect access to care in many parts of the state. Racial and ethnic minorities, persons with low-income and individuals with special health care needs are all less likely to have access to regular dental care and resources, further compounding their disease problems.

Workforce capacity in the public and private sectors is also challenged to meet the oral health needs of these populations. Safety net providers—including local health departments, community health centers, and free clinics—have traditionally provided access to dental services for individuals in need. The oldest dental safety net provider is VDH's dental program working with a traditional model of a dentist and dental assistant. More recently, some localities have employed dental hygienists to provide preventive services augmenting treatment services. In 2011, there were 31 full- and part-time VDH dentists in 21 of the 35 health districts, treating approximately 20,000 individual patients and providing 135,000 services annually, 44% of which are preventive (including cleanings, fluoride, and sealants). A map of existing VDH local health department dental clinic programs is included as Appendix B. According to the Virginia Health Care Foundation, there are also currently 28 community health center sites and 29 free clinics providing dental services across the state. Volunteer programs such as the Virginia Dental Association Mission of Mercy have grown in an effort to meet the increasing need for dental services, a sign of the demand for dental care for underserved segments of the population.

Because the Commonwealth of Virginia continues to face challenges in improving access to dental services for its most vulnerable citizens in underserved areas of the state, a pilot program was developed to use the new practice provision as an alternate model of service delivery. This pilot has enabled a small cohort of dental hygienists to provide preventive dental services in selected settings without the general or direct supervision of a dentist. This is the final comprehensive report of services provided as a result of this legislation and describes efforts to improve access to preventive dental services for those

populations at highest risk of dental disease and reduce barriers for low-income individuals in underserved areas of the state.

Practice Protocol for VDH Dental Hygienists

Based on the legislative guidance, VDH established and convened a committee in 2009 to develop the dental hygiene practice protocol. The committee had representation from the agencies outlined in the legislation, which included the VDH Dental Health Program, the VDH District Health Directors and Community Health Services, the Virginia Board of Dentistry, the Virginia Dental Hygienists' Association, and the Virginia Dental Association (Appendix C). The protocol, deemed *remote supervision*, was designed as a less restrictive oversight requirement for VDH dental hygienists in three health districts. Currently, 4,198 licensed dental hygienists with addresses in Virginia practice under general or direct supervision of a dentist. General supervision means that a dentist has examined the patient and authorized a dental hygienist to perform procedures, but the dentist need not be present in the treatment facility during the delivery of care. In comparison, the committee defined remote supervision to mean 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 on site with the dental hygienist when dental hygiene services are delivered."

In addition to defining remote supervision for VDH hygienists, the committee developed guidelines for the management and oversight required by VDH dentists and the requirements for a licensed dental hygienist to practice under this protocol. In July 2009, the State Health Commissioner signed the remote supervision guidelines, which were subsequently provided to the Virginia Board of Dentistry. At a follow-up meeting, based on the discussion of the existing programs and services, several changes were proposed to amend the original protocol in order to document VDH dentist oversight and management. The final revised protocol approved by the State Health Commissioner in September 2010 was provided to the Board of Dentistry (Appendix D).

Implementation of the Pilot Protocol

To fund new dental hygienist positions to work under the new practice protocol in the three targeted health districts, VDH applied for and received a federal Oral Health Workforce Grant from the U.S. Health Resources and Services Administration (HRSA). One of the primary grant requirements was to establish school-based dental sealant programs, thus, providing an ideal opportunity to pilot the remote supervision protocol. Additional efforts were made to establish and recruit a position funded locally by the Lenowisco Health District during the same period. This report documents the services provided by a total of six full- or part-time dental hygienists who have worked under remote supervision in these three districts. Because of staff changes, the hygienists have not all worked continuously during the reporting period. However, this report includes all services provided from September 2009 to June 2011.

The VDH Dental Health Program developed and provided orientation and a training plan for dentists to use with the hygienists practicing under remote supervision. VDH dentists were responsible for providing initial on-site training for all the hygienists according to the new remote supervision protocol requirements.

School-based sealant programs targeting low-income children who did not have a family dentist were started in the three districts. A dental sealant is a plastic material that is applied to the chewing surfaces of the back teeth (molars) to act as a barrier to bacteria and to prevent cavities. Sealant programs typically include oral health education, dental screening, referral for dental treatment, and dental sealant and fluoride application. The Centers for Disease Control and Prevention Task Force on Community Preventive Services found strong evidence that school-based and school-linked sealant programs are effective in reducing tooth decay, with a median decrease in tooth decay of 60%.[2] The dental hygienists spent substantial effort working with school administration and staff in the schools in all three districts to provide information about the dental sealant program and encourage participation. The hygienists also met with local private dentists and safety net providers to introduce the program, gain acceptance, and facilitate referral of children with treatment needs.

Public programs that support the placement of dental sealants are quite successful, and in many states, dental hygienists are the primary providers in school-based sealant programs. A dental hygienist is widely accepted as equally skilled in applying dental sealants as a dentist. A 10-year retrospective study comparing the longevity of sealants placed by dentists, dental hygienists, and dental assistants found that all operators are effective in applying sealants.[3]

Report of Services Provided

Services Provided Under Remote Supervision

As described above, the primary services provided under remote supervision were in the school-based dental sealant programs. Summary data for the school sealant programs are presented in this section and detailed reports for each health district (Cumberland Plateau, Lenowisco and Southside) are in Appendix E.

During the 2010-2011 school year, 64 of the 75 (85%) targeted elementary and middle schools in the three districts participated in the school-based sealant program. Forty-one of these schools participated in 2009-2010, and 23 additional schools participated in 2010-2011. The school-based sealant program specifically targeted children enrolled in the National School Lunch Program in these schools. Over 1,500 children returned a permission form to receive a screening by a dental hygienist for an average response rate of 19%.

Of the 1,514 children screened, 59% received dental sealants on permanent molar teeth (Table 1). A total of 3,186 permanent molar teeth were sealed for an average of 3.6 sealants per child. During the two-year period, the dental hygienists referred 722 (48%)

children from the sealant program to a dentist for evaluation or treatment for fillings, root canals, and/or extractions. Of the 248 children referred during the first year of the program, follow-up status is available for 81. As of this report, 23 (28%) had all their treatment needs completed.

The program protocol included evaluating the sealants placed during the prior year. Additionally, new sealants were placed on teeth previously unable to be sealed because the children were not present at the first appointment. The retention rate was very high, ranging from 92.5% to 100% for the children who received sealants in 2009-2010.

Table 1. Sealant Program Summary Data Provided Under Remote Supervision, All Grades, By Health District, 2009-2011

Health District	Number of Children Screened (response rate)*	Number of Children Referred	Number of Children Sealed	Number of Teeth Sealed	Number of Teeth Sealed/Child (Average)
Cumberland Plateau	321 (19%)	104	236	834	3.5
Lenowisco	971 (18%)	509	458	1,722	3.8
Southside	222 (28%)	109	195	630	3.2
Total	**1,514 (19%)**	**722**	**889**	**3,186**	**3.6**

*****Based on free and reduced lunch program enrollment. A child could be screened and not be a candidate for a dental sealant due to the status of the permanent molar teeth, including filled, decayed, or not fully erupted into the mouth.

The Centers for Disease Control and Prevention has implemented computer software, titled Sealant Efficiency Assessment for Locals and States (SEALS), as an evaluation and benchmarking tool for administrators of community sealant programs.[4] This tool was modified and used to collect and report the data for this report. Summary tables for both years of the program are available in Appendix F.

Cost Comparison of Services Provided Under Remote vs. General Supervision

Because VDH had dental sealant programs operating in other districts under the general supervision of a public health dentist, cost comparison data were available for the remote supervision model. The ability to provide services to children, as well as the cost-effectiveness of a sealant program depend, in part, on whether a dentist must examine children before sealants can be placed.

Costs were calculated for the two models using fixed costs—including staff salaries for clinic and administrative time, travel to the school, dental materials, clinic supplies, and equipment depreciation—and were based on an overall average of 3.6 sealants placed per child. Using these data and assumptions, the cost per child to apply 3.6 sealants was 25% more under general supervision than under remote supervision ($86.76 vs. $69.35). On average, the cost per sealant was $24.10 under general supervision and $19.26 under remote supervision. The final analysis could not incorporate such factors as the amount of classroom time missed. Specifically, the general supervision model required two

visits: one visit to the dentist for the screening and treatment plan and a follow-up visit to the hygienist to apply the sealants. In contrast, the screening and sealants were conducted at the same visit under the remote supervision model.

According to the American Dental Association Fee Schedule for the South Atlantic Region, the average charge in private dental offices is $44.25 (range $30.00 to $64.00) for a dental sealant.[5]

Services Provided Under Other Existing Supervision Protocols

In addition to the sealant programs provided under the pilot remote supervision protocol, preventive services were provided under existing practice protocols by the dental hygienists. Therefore, to provide a comprehensive picture of preventive services provided by all VDH dental hygienists in Cumberland Plateau, Lenowisco, and Southside Health Districts, the following data are provided for each health district.

Fluoride Varnish Program: Under existing regulations and a standing order from a dentist or physician, VDH dental hygienists can provide screening, education, and fluoride varnish. Fluoride varnish is an evidence-based application for the primary (baby) teeth that reduces decay from 40% to 60%. VDH "Bright Smiles for Babies" program has partnered with the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) as a way to provide low-income children and their parents with these services. VDH also partners with the Care Connection for Children network to provide these services to children with special health care needs and with some Head Start programs. Screenings and fluoride varnish application have been provided for over 1,800 children in the three districts; 1,351 of these children were referred to a dentist to establish a dental home (Table 2). Parental education was also provided to 803 parents, which is included in Table 3 below.

Table 2. Services Provided Through "Bright Smiles for Babies" Fluoride Varnish Program by VDH Dental Hygienists in Three Health Districts, 2009-2011

Health District	Number of Children Screened*	Number of Children Treated with Fluoride Varnish	Number of Children Referred to a Dental Home
Cumberland Plateau	773	736	380
Lenowisco	154	56	108
Southside	895	815	863
Total	1,822	1,607	1,351

*The number of children screened is greater than those treated with varnish because some children who are screened do not have teeth.

Dental Health Education: Dental hygienists provided dental health education to a variety of customers in the programs operating under all practice protocols. For example, education of teachers, parents, and students was conducted in many schools to increase knowledge of, and participation in, the school-based sealant programs. Other venues included the Bright Smiles for Babies program in WIC clinics, preschool programs such as Head Start, and professional trainings for nurses and other health providers. In total, 13,105 individuals were provided dental health education or training during this pilot period (Table 3).

Table 3. Education and Training Provided by VDH Dental Hygienists in Three Health Districts, 2099-2011

Health District	Number of Preschool and School Age Children Educated	Number of Parents and Citizens Educated	Number of Teachers Trained	Number of Professionals Trained
Cumberland Plateau	2,839	1,898	431	33
Lenowisco	4,433	210	242	145
Southside	1,385	1,147	21	321
Total	**8,657**	**3,255**	**694**	**499**

Dental Referrals: Dental hygienists can serve as an efficient pipeline for identifying and referring patients in need of care by a dentist. In addition to the 722 children referred to a dentist for treatment through the dental sealant program and 1,263 children referred to a dental home through the fluoride varnish program, the dental hygienists in the targeted health districts worked with local home visiting programs.

Home visiting programs offer a mechanism for providing at-risk families with ongoing health education and linkage with public and private community services, including assistance with making and keeping dental appointments. To support the project, the hygienists maintain communication with the home visitors regarding patients they have referred, provide technical support, and record tracking information. Additionally, the dental hygienists have contacted all pediatric and general dentists in their districts to inform them about the project and to ask for their assistance in providing dental care for the children. Most dentists responded favorably; by locality, from 60% to 100% agreed to be on a referral list developed by the hygienists. The dental hygienists also contacted the dental offices to make sure appointments had been kept, treatment had been completed, and a routine follow-up dental visit had been scheduled. Funding for home visitors to provide dental education and care coordination was from the HRSA workforce grant.

As shown in Table 4 below, a total of 422 pregnant women and children have been referred to a home visitor for education and care coordination.

Table 4. Referrals to Home Visitors by Dental Hygienists in Three Targeted Health Districts, 2009-2011

Health District	Number of Pregnant Women Referred to Home Visitor (HV)	Number of Children Referred to HV (Aged 0-4 years)	Number of School-Age Children Referred to HV (Aged 5-14 years)
Cumberland Plateau	1	55	27
Lenowisco	5	57	237
Southside	13	10	17
Total	**19**	**122**	**281**

Recommendations

As this report indicates, the remote supervision model offers the potential of an alternative method of delivery for safety net dental program services and increased access for underserved populations. Increasing access to preventive services such as sealants and fluoride has been proven to significantly reduce the dental disease burden, which is a priority need for those populations at highest risk. With an aging public health workforce and difficulties in recruiting dentists into safety net positions, the remote supervision model could offer an alternative for VDH programs as dentists retire and cannot be replaced. Preventive services could be provided to more individuals at a lower personnel cost, with referrals to public health dentists primarily for treatment services from a greater geographic area. The potential for program sustainability improves as costs for delivering services are reduced with this model compared to those provided under general supervision. The remote supervision protocol has also proven successful in increasing the ability for VDH to successfully compete for federal grant funding for staff to work under this model.

Therefore, the recommendations regarding the future of the remote supervision practice protocol for VDH dental hygienists are as follows:

- Extend the provisions in § 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia for one year (to expire July 1, 2013) as an exemption to the existing regulations for the practice of dentistry and dental hygiene. This provides for the continuation of remote supervision in the three existing health districts (Cumberland Plateau, Lenowisco and Southside).

- Expand the above provision to include additional VDH health districts with adequate resources (e.g., staff and funding) to provide care to individuals who qualify for services according to the VDH eligibility guidelines**.** Determine the need, if any, for limiting additional VDH clinics operating under this protocol to dental Health Professional Shortage Areas (HPSA), ensuring that these clinics can continue with the program for the entire extended period (to expire July 1, 2013).

- Consider a statutory change in § 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia) to make this protocol within the scope of practice by July 1, 2013.

- Maintain the VDH committee for an annual revision and/or review of the protocol.

- Explore options for increasing participation in programs as well as increasing the number of children with dental treatment completed.

References

1. "RD327 – Report of Services Provided by Virginia Department of Health Dental Hygienists Pursuant to a Practice Protocol in the Cumberland Plateau, Lenowisco, and Southside Health Districts". Available at: http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/RD3272010/$file/RD327.pdf

2. Centers for Disease Control and Prevention. Promoting Oral Health: Interventions for Preventing Dental Caries, Oral and Pharyngeal Cancers, and Sports-Related Craniofacial Injuries—A Report on Recommendations of the Task Force on Community Preventive Services. MMWR Recomm Rep 2001;50(RR-21):1-13.

3. Folke BD, Walton JL, Feigal RJ. Occlusal Sealants Success Over Ten Years in a Private Practice: Comparing longevity of sealants placed by dentists, hygienists and assistants. Pediatr Dent. 2004: 26: 426-432.

4. Sealant Efficiency Assessment for Locals and States (SEALS). CDC website. 2007. Available at: http://www.cdc.gov/ORALHEALTH/state_programs/infrastructure/seals.htm.

5. American Dental Association (ADA). 2009 Survey of Dental Fees. ADA Survey Center, December 2009.

Appendix A: Section 54.1-2722 of the Code of Virginia Relating to the Protocol

§ 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia as follows:

E. ~~(Expires July 1, 2011)~~ Notwithstanding any provision of law or regulation to the contrary, a dental hygienist employed by the Virginia Department of Health who holds a license issued by the Board of Dentistry may provide educational and preventative dental care in the Cumberland Plateau, Southside, and Lenowisco Health Districts, which are designated as Virginia Dental Health Professional Shortage Areas by the Virginia Department of Health. A dental hygienist providing such services shall practice pursuant to a protocol developed jointly by the medical directors of each of the districts, dental hygienists employed by the Department of Health, the Director of the Dental Health Division of the Department of Health, one representative of the Virginia Dental Association, and one representative of the Virginia Dental Hygienists' Association. A report of services provided by dental hygienists pursuant to such protocol, including their impact upon the oral health of the citizens of these districts, shall be prepared and submitted by the medical directors of the three health districts to the Virginia Secretary of Health and Human Resources by ~~November 1, 2010~~ January 1, 2012. Nothing in this section shall be construed to authorize or establish the independent practice of dental hygiene.

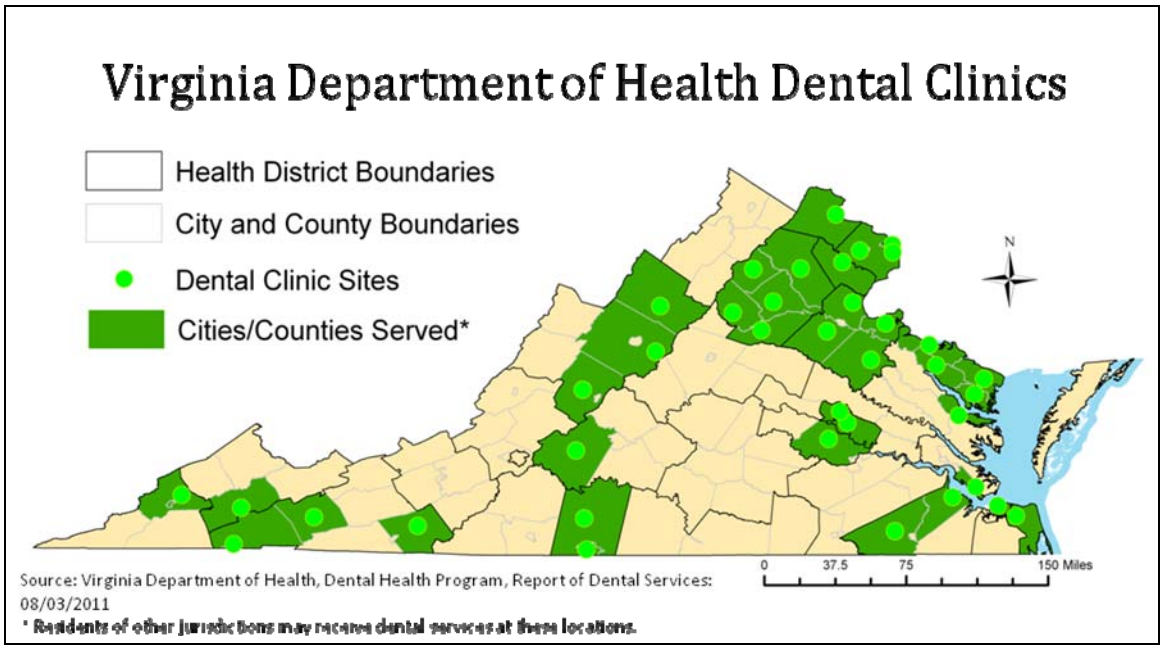
2. That the third enactment of Chapter 99 of the Acts of Assembly of 2009 is amended and reenacted as follows:

3. That the provisions of this act shall expire on July 1, ~~2011~~ 2012.

3. That the third enactment of Chapter 561 of the Acts of Assembly of 2009 is amended and reenacted as follows:

3. That the provisions of this act shall expire on July 1, ~~2011~~ 2012.

Appendix B: Map of VDH Local Health Department Dental Clinic Programs



Appendix C: Virginia Department of Health (VDH) Dental Hygienist Protocol Committee

Name	Title	Agency
Dr. Terry Dickinson	Executive Director	Virginia Dental Association
Kelly T. Williams, RDH, MS	Past President	Virginia Dental Hygienist's Association
Sandra Reen	Executive Director	Virginia Board of Dentistry
Dr. John Dreyzehner	District Director Cumberland Plateau Health District	Virginia Department of Health
Dr. E. Sue Cantrell	District Director Lenowisco Health District	Virginia Department of Health
Dr. Charles Devine	District Director Southside Health District	Virginia Department of Health
Norma Marrin	Executive Advisor Community Health Services	Virginia Department of Health
Dr. Karen Day	Dental Health Program Manager Office of Family Health Services	Virginia Department of Health
Dr. Lynn Browder	Dental Health Program Quality Assurance Manager Office of Family Health Services	Virginia Department of Health
Susan Pharr, RDH	Program Coordinator Office of Family Health Services	Virginia Department of Health

Appendix D: Protocol for Virginia Department of Health Dental Hygienists to Practice in an Expanded Capacity under Remote Supervision by Public Health Dentists

As authorized by law, the Virginia Department of Health is conducting a pilot program in three health districts, Cumberland Plateau, Lenowisco and Southside, to assess the use of dental hygienists employed by VDH in an expanded capacity as a viable means to increase access to dental health care for underserved populations. This protocol shall guide the pilot program.

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 Health 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, the Association of State and Territorial Dental Directors, as well as VDH Occupational Safety and Health Administration (OSHA), Hazard Communication and Blood Borne Pathogen Control Plans.

Management (cont'd):

- VDH monitoring by the public health dentist during remote supervision activities 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.

- The protocol may be revised as necessary during the trial period through agreement of the committee composed of medical directors of the three health districts, staff from the Division of Dental Health and Community Health Services, and representatives from the Virginia Dental Hygienists' Association, Virginia Dental Association and Virginia Board of Dentistry. This committee shall meet and discuss program progress and any necessary revisions to the protocol at periodic intervals beginning July 1, 2009. The protocol and any revisions will be approved by the State Health Commissioner of VDH.

- 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) in the three targeted health districts.

- 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 they should take their 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 the Virginia Department of

Health in a full or part time position and have a minimum of two years of dental hygiene practice experience.

Remote Supervision Practice Requirements (cont'd):

- 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.

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.

Approved July, 2009; Revised September, 2010, Signed by the State Health Commissioner September 2010

Appendix E: Services Provided by VDH Dental Hygienists Under Remote Supervision 2009-2011, by District

Cumberland Plateau Health District

Twenty-five (83%) of 30 targeted elementary and middle schools in the Cumberland Plateau Health District participated in the VDH school-based sealant program during the 2010-2011 school year. Seventeen of these schools participated in the 2009-2010 school year. Tazewell County Schools participated for the first time.

The percentage of students enrolled in the free and reduced lunch program in the participating schools ranged from 41% to 81% (median=59%). Dental sealant program services were provided during both school years (September 2009, March to May 2010, and October 2010 to May 2011).

During the two-year period, permission forms were distributed to 2,788 children at the 25 schools (1,973 in second grade and 815 in sixth grade). The dental hygienists screened the 321 children who returned permission forms for a response rate of 12%. The response rate increases to approximately 19% if only children enrolled in the free and reduced lunch program are considered. A total of 281 second grade children were screened, 202 of whom received sealants. Forty sixth grade children were screened, 34 of whom received sealants. The 236 children who received sealants had a total of 834 sealants placed on permanent molar teeth, for an average of 3.5 sealed teeth per child.

Children with treatment needs such as fillings, root canal treatment, and extractions were referred to a local dentist. In 2010-2011, 56 (28%) were referred to a dentist for evaluation or treatment. Of the 48 children referred for treatment in 2009-2010, information on whether their treatment was completed was available for 12 of these children; seven (58%) had their treatment completed.

The program protocol included evaluating the sealants placed during the 2009-10 school year. These children were now in the third and seventh grade. Of the 83 children who received sealants in 2009-2010, 63 (76%) had their sealants checked (55 in 3rd grade, 8 in 7th grade). The retention rate was 92.5% (196/212 teeth). Additionally, new sealants were placed on teeth previously unable to be sealed because they were unerupted or partially erupted. The hygienist placed an additional five sealants on 3rd and 7th grade children.

The table below shows the number of children who were screened, received sealants, or were referred to a dentist according to locality and school in Cumberland Plateau Health District. It also includes the number of children whose sealants were done last year and had them checked this year.

Table 5. Services Provided in Cumberland Plateau Health District during the 2009-2010 and 2010-2011 School Years

Locality/School	# Children Screened	# Children Sealed (2nd and 6th grade)	# Children Seen for Sealant Evaluation (Sealants placed last year)	# Children Referred for Dental Treatment
Buchanan County	**115**	**82**	**31**	**38**
Council Elementary/Middle	6	5	2	1
Hurley Elementary/Middle	24	15	8	9
J.M. Bevins Elementary	13	7	1	6
Riverview Elementary	18	13	6	5
Russell Prater Elementary	14	10	2	4
Twin Valley Elementary/Middle	40	32	12	13
Dickenson County	**55**	**39**	**17**	**21**
Clinchco Elementary	19	16	7	5
Clintwood Elementary	9	6	2	4
Ervinton Elementary	12	7	2	7
Longs Fork Elementary	5	4	2	1
Sandlick Elementary	10	6	4	4
Russell County	**62**	**49**	**15**	**25**
Belfast Elk Garden Elementary	7	6	0	3
Castlewood Elementary	9	7	4	5
Cleveland Elementary	7	6	3	3
Givens Elementary	6	5	0	2
Honaker Elementary	20	16	5	9
Lebanon Elementary	13	9	3	3
Tazewell County	**89**	**66**	**NA***	**20**
Abbs Valley-Boissevain Elementary	9	7	NA*	4
Cedar Bluff Elementary	7	6	NA*	1
Dudley Primary	16	12	NA*	3
North Tazewell Elementary	6	5	NA*	3
Raven Elementary	7	5	NA*	1
Richlands Elementary	22	16	NA*	6
Springville Elementary	10	5	NA*	0
Tazewell Elementary	12	10	NA*	2
District Total	**321**	**236**	**63**	**104**

*NA – School did not participate in sealant program during the 2009-2010 school year.

Lenowisco Health District

Twenty-five (83%) of 30 elementary and middle schools in the Lenowisco Health District participated in the VDH school-based sealant program during the 2010-2011 school year, an increase from 17 schools participating in 2009-2010. One school that participated in 2009- 2010 did not participate in 2010-2011. The percentage of students enrolled in the free and reduced lunch program in these schools ranged from 39% to 81% (median=58%). Dental sealant program services were provided during both school years (April to June 2010 and September 2010 to June 2011).

Permission forms were distributed to 9,054 children from Kindergarten to eighth grade. The dental hygienists screened the 971 children who returned permission forms for an overall response rate of 11%. The response rate increases to about 18% if only children enrolled in the free and reduced lunch program are considered. In addition to the screening, these children also received a dental cleaning and fluoride varnish application.

Of the 971 children screened, 458 received sealants. A total of 1,722 sealants were placed on permanent molar teeth, for an average of 3.8 sealants per child.

Children with treatment needs such as fillings, root canal treatment, and extractions were referred to a local dentist. In 2010-2011, 342 (50%) were referred to a dentist for evaluation or treatment. Of the 167 children referred for treatment in 2009-2010, information on whether their treatment was completed was available for 37 of these children; 13 (35%) had their treatment completed.

The program protocol included evaluating the sealants placed during the 2009-10 school year. Based on a sample of 69 children, retention of sealants was reported to be 100%.

The table below shows the number of children who were screened, received sealants, or were referred to a dentist according to locality and school in Lenowisco Health District. It also includes the number of children whose sealants were done last year and had them checked this year.

Table 6. Services Provided in Lenowisco Health District the 2009-2010 and 2010-2011 School Years

Locality/School	# Children Screened	# Children Sealed (K – 8th grade)	# Children Seen for Sealant Evaluation (Sealants placed last year)	# Children Referred for Dental Treatment
Lee County	**247**	**144**	**42**	**126**
Dryden Elementary	51	24	NA*	28
Elk Knob Elementary	22	15	9	13
Elydale Elementary	14	8	3	8
Ewing Elementary	26	17	5	11
Flatwoods Elementary	73	41	9	25
Keokee Elementary	12	8	6	8
Pennington Middle	19	8	NA*	16
Rose Hill Elementary	9	7	NA*	6
St. Charles Elementary	12	12	6	7
Stickleyville Elementary	9	4	1	4
Scott County	**216**	**123**	**22**	**108**
Duffield-Pattonsville Primary	52	35	8	36
Fort Blackmore Primary	21	9	3	10
Hilton Elementary	18	10	2	7
Nickelsville Elementary	19	14	6	5
Shoemaker Elementary	56	26	8	23
Weber City Elementary	27	15	3	13
Yuma Elementary	23	14	0	14
Wise County/Norton City	**508**	**191**	**-**	**275**
Appalachia Elementary	9	7	NA+	8
Coeburn Middle	39	8	NA*	27
Coeburn Primary	57	18	NA*	29
JW Adams Combined	53	18	NA*	27
LF Addington Middle	61	23	NA*	33
Norton Elementary	111	55	Data not available	68
Powell Valley Primary	102	49	Data not available	59
St. Paul Elementary	15	3	NA*	6
Wise Primary	61	10	NA*	18
District Total	**971**	**458**	**64**	**509**

*NA – School did not participate in sealant program during the 2009-2010 school year.
+ NA – School did not participate in sealant program during 2010-2011 school year.

Southside Health District

Fourteen (93%) of 15 elementary schools in the Southside Health District participated in the VDH school-based sealant program during the 2010-2011 school year, an increase from the eight schools participating in 2009-2010. Mecklenburg County Schools participated for the first time.

All participating schools have a high percentage of children enrolled in the free and reduced lunch program, ranging from 56% to 90% (median=67%). Dental sealant program services were provided during both school years (April to May 2010 and August 2010 to June 2011).

Permission forms were distributed to 1,247 second grade children at the 14 schools. The dental hygienists screened the 222 children who returned permission forms for a response rate of 18%. The response rate increases to approximately 28% if only children enrolled in the free and reduced lunch program are considered. A total of 195 second grade children received sealants. These children had 630 sealants placed on permanent molar teeth, for an average of 3.2 sealants per child. Almost all of the children needed sealants on all four first molar teeth.

Children with treatment needs such as fillings, root canal treatment, and extractions were referred to a local dentist. In 2010-2011, 76 (54%) were referred to a dentist for evaluation or treatment. Of the 33 children referred for treatment in 2009-2010, information on whether their treatment was completed was available for 32 of these children; three (9%) had their treatment completed.

The program protocol included evaluating the sealants placed during the 2009-2010 school year. These children were now in the third grade. Of the 67 children who received sealants in 2009-2010, 62 (93%) had an evaluation the following year. The retention rate was 98.8% (163/165 teeth). Additionally, new sealants were placed on teeth previously unable to be sealed because they were unerupted or partially erupted. The hygienists placed an additional 42 sealants on 3rd grade children.

The table below shows the number of children who were screened, received sealants, or were referred to a dentist according to locality and school in Southside Health District. It also includes the number of children whose sealants were done last year and had them checked this year.

Table 7. Services Provided in Southside Health District the 2009-2010 and 2010-2011 School Years

Locality/School	# Children Screened	# Children Sealed (2nd grade)	# Children Seen for Sealant Evaluation (Sealants placed last year)	# Children Referred for Dental Treatment
Brunswick County	**60**	**53**	**27**	**17**
Meherrin Powellton Elementary	14	13	6	4
Red Oak-Sturgeon Elementary	20	17	11	6
Totaro Elementary	26	23	10	7
Halifax County	**109**	**91**	**35**	**64**
Clays Mill Elementary	4	3	3	3
Cluster Springs Elementary	29	23	10	11
Meadville Elementary	12	12	4	11
Scottsburg Elementary	20	18	14	11
South Boston Elementary	30	24	NA*	19
Sydnor Jennings Elementary	14	11	4	9
Mecklenburg County	**53**	**51**	**NA***	**28**
Buckhorn Elementary	5	5	NA*	3
Chase City Elementary	12	12	NA*	4
Clarksville Elementary	11	10	NA*	4
LaCrosse Elementary	3	3	NA*	3
South Hill Elementary	22	21	NA*	14
District Total	**222**	**195**	**62**	**109**

*NA – School did not participate in sealant program during the 2009-2010 school year.

Appendix F: Summary Data for School-Based Sealant Programs

Table 8a. Sealant Program Summary Data Provided Under Remote Supervision, All Grades, By Health District, 2009-10 School Year

Health District	Number of Children Screened (response rate)*	Number of Children Referred	Number of Children Sealed	Number of Teeth Sealed	Number of Teeth Sealed/Child (Average)
Cumberland Plateau	124 (20%)	48	83	273	3.3
Lenowisco	281 (21%)	167	196	807	4.1
Southside	80 (33%)	33	67	197	3.0
Total	**485 (22%)**	**248**	**346**	**1,277**	**3.7**

*****Based on free and reduced lunch program enrollment

Table 8b. Sealant Program Summary Data Provided Under Remote Supervision, All Grades, By Health District, 2010-11 School Year

Health District	Number of Children Screened (response rate)*	Number of Children Referred	Number of Children Sealed	Number of Teeth Sealed	Number of Teeth Sealed/Child (Average)
Cumberland Plateau	197 (18%)	56	153	561	3.7
Lenowisco	690 (17%)	342	262	915	3.5
Southside	142 (25%)	76	128	433	3.4
Total	**1,029 (19%)**	**474**	**543**	**1,909**	**3.5**

*****Based on free and reduced lunch program enrollment

Table 8c. Sealant Program Summary Data Provided Under Remote Supervision, All Grades, By Health District, 2009-2011

Health District	Number of Children Screened (response rate)*	Number of Children Referred	Number of Children Sealed	Number of Teeth Sealed	Number of Teeth Sealed/Child (Average)
Cumberland Plateau	321 (19%)	104	236	834	3.5
Lenowisco	971 (18%)	509	458	1,722	3.8
Southside	222 (28%)	109	195	630	3.2
Total	**1,514 (19%)**	**722**	**889**	**3,186**	**3.6**

*****Based on free and reduced lunch program enrollment