

Building School - Community Partnerships for Children's Oral Health in West Virginia

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INTRODUCTION

At one large hospital in West Virginia, about 40 children and adolescents are admitted to outpatient surgery every month to have teeth extracted. According to the nursing director, most of these admissions could have been avoided if children received adequate preventive dental care.

The purpose of this document is to provide a conceptual framework for the development and expansion of local programs to improve the oral health of children in West Virginia. In particular, it focuses on the roles of schools and local health care providers in planning and implementing dental services to address this need. The recommendations are based on a review of the literature and input from an advisory committee representing various perspectives.

BACKGROUND

As part of their oral health initiative in West Virginia, the Benedum Foundation awarded a one-year grant to the School Health Technical Assistance and Evaluation Center at Marshall University to facilitate the design, planning, and evaluation of school - based dental services in West Virginia. An online survey (Appendix 1) of school nurses and school health centers revealed that access to dental care was a huge problem and that there were very few school-based or school-linked services - even though such programs are recognized as an effective public health preventive measure.¹ A project advisory committee was formed and began meeting monthly via conference calls. The committee organized a statewide conference on school based dental services in April, 2008 and produced this concept paper to assist communities and funders in developing school based dental services programs.

ORAL HEALTH STATUS

Daily, West Virginia children and youth are in hospitals for costly dental services that could have been prevented. Oral health is essential to overall health, especially for children. Dental caries is an infectious disease process that is the most common - and yet 100 percent preventable - chronic childhood disease. Among children 5 to 17 years – it is

four times more common than asthma (42% vs. 9% in U.S.) - and it results in considerable burden, especially among poor children and adolescents who are almost twice as likely to have untreated decay as other children.² It affects a child's ability to sleep, eat, and learn. The 1996 National Health Survey reported that students 5-17 years lost an average of 3.1 days per 100 students due to acute dental problems; and children from low income families had 12 times as many missed days as did children from higher income families³.

While WV has made progress in addressing oral health needs, it is still among the states with very poor oral health:

- 66 percent of children have cavities by age eight;
- 33 percent of 15 year olds have untreated decay- compared to the national average of 20 percent;
- 80 percent of dental caries in children is concentrated in 25% of the child population;
- By age eight, only 37% of children have received protective sealants;⁴
- 64% of Medicaid children did not see a dentist in 2003 even though they are entitled to the full range of dental services;⁵

ACCESS ISSUES

Barriers to care are many and complex. Most relevant for children are the following.

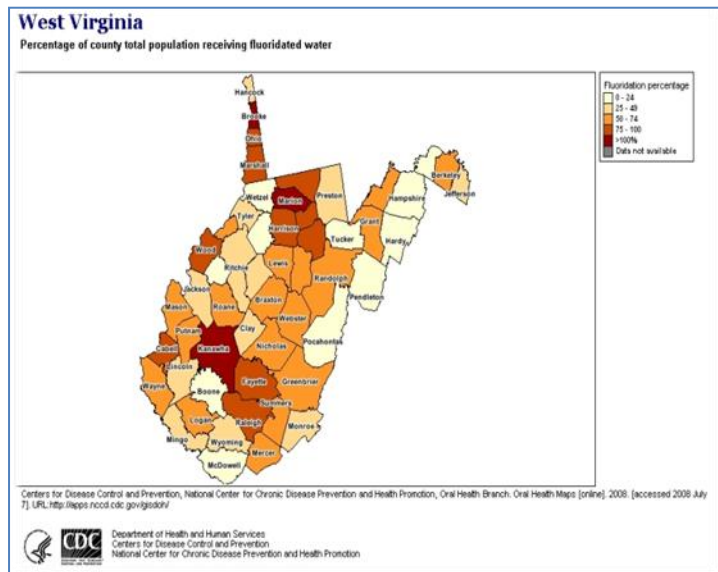
Fluoridation: The CDC recognizes community water fluoridation as one of the ten greatest public health achievements of the twentieth century. Children in communities with water fluoridation experience 29% fewer cavities. Every dollar spent on water fluoridation saves \$7 to \$42 in treatment costs.

The 1996 National Health Survey reported that students missed an average of 3.1 days of school per 100 students because of dental problems.

Children from low-income families missed 12 times as many days as did children from higher income families.

- *National Maternal and Child Oral Health*

In West Virginia, thirty percent of the population has inadequately or non-fluoridated water. This statistic is calculated based on 1) 72% of the state's population (1.8 million) are served by a public water supply; and 2) of that number, 91.5% have adequately fluoridated water.



Only 12 counties have greater than 75% of their population receiving fluoridated water; eight counties have no fluoridated water systems.⁶

Sealant programs: Children receiving sealants in school based programs have 60% fewer new decayed pit and fissure surfaces in back teeth for up to 2 to 5 years after a single application. Among children, 90% of decay is in pits and fissures.⁷ Findings from scientific studies clearly show that school-based sealant programs work to stop tooth decay.⁸ The Task Force on Community Preventive Services and the Association of State and Territorial Dental Directors (ASTDD) both recommend school sealant programs.

Despite this evidence, however, West Virginia has only a handful of community/school sealant programs. In the survey of school nurses conducted in 2007 (Appendix 1), nine counties reported having sealant programs but three of those were quite limited, serving fewer than 50 children during the year. One issue which contributes to the low use of schools for sealant programs is the lack of consensus about specific program practices. However, recent studies support the benefits of sealants and the ADA published evidence based clinical recommendations in March, 2008.⁹ As an example of the potential effectiveness of school programs, in Ohio, among children covered by Medicaid, 58% of those in schools with sealant programs have sealants compared with 22% of those in schools without programs. In ten years the percentage of 8 year olds with sealants has more than doubled.¹⁰

Fluoride mouth rinses and dietary supplements: The Association of State and Territorial Dental Directors (ASTDD) recommends fluoride rinse programs for all students 6-16 years in counties with less than optimally fluoridated water..¹¹ In the survey of West Virginia school nurses, 24 counties reported having some level of school fluoride program. The extent of the programs is

unknown. Issues that have been identified are 1) lack of school nurses to carry out the programs; 2) class time; and 3) Board of Nursing policy that requires school nurses to get medical approval for distributing over-the-counter (OTC) medications, which includes fluoride.

The majority of low-income children have dental coverage through Medicaid and WV CHIP.

Despite this coverage, only 40% of Medicaid eligible children 3-10 years saw a dentist in 2003.

Insurance coverage: While a lack of insurance coverage is a major barrier to accessing dental care, insurance coverage alone will not address the access issues. In 2001, although 71.6% of West Virginia's children were covered by dental insurance, 40% had not seen the dentist in the last six months.¹² The majority of low income children have dental coverage through Medicaid and the WV Child Health Insurance Program (WVCHIP). Despite this coverage, however, only 40% of Medicaid eligible children 3 -10 years saw a dentist in 2003.¹³

Shortage of dentists: Thirty four of WV's counties are federally-designated all or in-part as dental health professional shortage areas¹⁴.According to recent national data, WV has .465 dentists per 1,000 people which places it 39th among states¹⁵and well below the national average of .636 per 1,000 population. There are .397 dental hygienists per 1,000 population, also below the national rate .While these ratios do not in themselves indicate a shortage of dentists or hygienists, based on national guidelines, their distribution across the state is uneven. Furthermore, with significant numbers of dentists close to retiring, there are concerns that the shortages will become even greater, given that the WVU School of Dentistry graduates only 50 dentists per year.

Dentists limit number of Medicaid patients: Although WV ranks well in comparison to other states when it comes to the percentage of dentists willing to take Medicaid¹⁶, many

dentists limit the number that they will accept. In one study in the Kanawha Valley, about one-third of Medicaid families interviewed said that the dentist was not accepting any more Medicaid patients compared with seven percent of families with a CHIP card.¹⁷

Reasons cited by WV dentists for limiting the number of Medicaid patients are:

- Broken appointments and non-compliant patients¹⁸
- Low reimbursement
- Burdensome administrative requirements

Cultural and social factors: For many parents who are struggling to put food on the table, dental care is not a high priority. Furthermore, their only experience with dentists may have been negative – at the point when an extraction is needed. Not having experienced preventive care themselves, it is not likely to be a high priority for their families.

WHY SCHOOL-BASED PROGRAMS?

The ultimate goal is for every child and teen to have a dental home. School based programs can help to reach that goal. They are an effective public health approach to increase access and preventive care. Although school-based programs cannot address all of the systems issues discussed above, they can:

- Increase access to prevention, case finding, and treatment, especially for low income children;
- Alleviate some the geographic, transportation and work barriers faced by parents;
- Reduce the scheduling problems and the high “no show” rate encountered in the dentist’s office;

Six months after intervention, the proportion of teeth with new decay was reduced by 52 percent in primary teeth and 31 percent in permanent. The percentage of children with newly decayed or restored primary and permanent teeth was reduced by 25 and 53 percent respectively.

These results indicate that this care model relatively quickly can overcome multiple barriers to care and improve children’s oral health. If widely implemented, comprehensive caries prevention programs could accomplish national health goals and reduce the need for new care providers and clinics.

-ForsythKids Program

- Influence cultural and social barriers by teaching youth and their families the importance of dental care and appropriate consumer behavior.

A recent evaluation of the school-based ForsythKids Program in Massachusetts concluded that six months after intervention, the proportion of teeth with new decay was reduced by 52 percent in primary teeth and 31 percent in permanent. The percentage of children with newly decayed or restored primary and permanent teeth was reduced by 25 and 53 percent, respectively. The authors state, “These results indicate that this care model relatively quickly can overcome multiple barriers to care and improve children’s oral health. If widely implemented, comprehensive caries prevention programs could accomplish national health goals and reduce the need for new care providers and clinics.”¹⁹

GUIDING PRINCIPLES

1. Programs should support the concept and use of a dental home and link students to private providers when possible.²⁰ If a student has a regular dental provider, the student should be encouraged to receive all care from that provider
2. Programs should work with school personnel to minimize disruption of class time.
3. Services should not duplicate programs or services already in a community; and should be coordinated with other dentists, school nurses, and primary care providers.
4. Services should focus on low income, Medicaid, and uninsured and include a sliding fee schedule based on ability to pay.
5. Consent for treatment must be provided by the parent/legal guardian. Parents will receive information about the program and any treatment provided to their child.

What is a Dental Home?

The dental home is the ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated and family – centered way. Establishment of a dental home begins no later than 12 months and includes referral to dental specialists when appropriate.

-American Academy of Pediatric Dentistry

6. If care does not include a full exam with radiographs, parents must be informed that the limited exam does not replace comprehensive, regular care.
7. Services are culturally competent: staff respects, understands, and incorporates at all levels sensitivity to ethnic, linguistic, and cultural diversity.²¹
8. The focus of school programs is preventive care. However, programs should ensure that every child screened will have reasonable access to needed treatment – preferably in a dental home or through the school/program.
9. School programs must work with local dentists to ensure that billing practices do not affect the local dentists’ ability to charge for restoration of carious teeth.
10. The program will abide by all federal and state laws and professional standards of practice.
11. Lastly, the program plan should incorporate continuous quality improvement and outcome evaluation methods.

SERVICES

A comprehensive caries prevention program that is school-based should focus on prevention - parent education and outreach, exams, screenings, varnish, sealants, and fluoride – and should target high risk students. However, it must also have the necessary linkages to ensure access to community providers for quality exams, treatment, and follow-up. School-based/linked oral health programs should address the following components:

The ASTDD recommends fluoride rinse programs for all students 6-16 years in counties with less than optimally fluoridated water.

Parent outreach and education: A variety of strategies can be employed to engage parents. Letters, newsletters, follow up phone calls, presentations to PTA meetings, openhouses, health fairs, etc will increase awareness and encourage parent involvement.

Fluoride mouth rinses and dietary supplements: The Association of State and Territorial Dental Directors (ASTDD) recommends fluoride rinse programs for all

students 6-16 years in counties with less than optimally fluoridated water..²² In the survey of West Virginia school nurses, 24 counties reported having some level of school fluoride program. The extent of the programs is unknown. Issues that have been identified are 1) lack of school nurses to carry out the programs; 2) class time; and 3) Board of Nursing policy that requires school nurses to get medical approval for distributing over-the-counter (OTC) medications, which includes fluoride.

Fluoride varnish: Fluoride varnish has proven to be effective in preventing tooth decay. It is applied twice per year and is ideally suited for infants, toddlers, and children because of the ease of application and minimal ingestion. It is adaptable to medical settings; no special equipment is needed; and non-dental health personnel can be easily trained in the application procedure. Communities should consider fluoride varnish as an adjunct to fluoride supplementation for early childhood programs, such as Headstart and WIC (Women, Infants, and Children), and in primary care settings.

Sealants for 2nd/ 3rd and 6th graders with appropriate follow-up to evaluate retention of the sealants; (see the ASTDD's "Best Practice Approach: School Based Sealant Programs" <http://www.astdd.org/index.php?template=bestpracschoolsealant.php>)

Referral for further assessment and treatment for any students identified as in need through formal arrangements with local dentists. Based on current program experience, one third to one-half of all students will need further assessment and/or restorative care. It is critical to have working relationships with the private dental community to ensure that students receive needed care in a timely manner and to avoid duplication of services.

MODELS

There is no single best model for school based dental programs. Much will depend upon local resources, needs, priorities, and geography. Most of the variation is in type of sponsoring organization and the location of services. Options and some considerations include:

- A fixed dental facility within the school: space, cost, limited access
- Mobile dental van: maintenance, staff cost, overhead;

- Portable dental units taken to schools on a regular schedule: space, equipment limitations, convenience;
- Children bused to a school linked clinic or private dental office: cost of transportation, time away from class;

Currently in West Virginia, most school based programs fall into two categories for sponsorship: 1) The county school district sponsors the program, with a school employed dental hygienist or school nurse as coordinator, and local dentists who volunteer; or 2) an outside agency – most often a community health center - contracts with the school system to provide the program. (See Appendix 3 for a description of various county programs as of 2006-2007)

COMPONENTS FOR SUCCESSFUL PROGRAMS

Successful school dental programs will require effort at both the state and local levels. To achieve sustainability, state level policies and resources will need to be supportive of local efforts and responsive to the barriers that communities will encounter. Elements that will contribute to success include:

1. **A planning process** that is at least county - wide. For some areas, a regional approach may be indicated. Planning should take a population-based approach to assess needs and resources, including identification of non fluoridated communities and other high risk groups, select priorities for program implementation; and establish an action plan that includes timeframes and strategies for sustaining and maintaining the project;
2. **A local advisory committee** that represents all stakeholder groups in the area to be served, including the local dental society, school administration, school nurses, parents, students, regional Oral Health Educators, the community health center, local health department, school based health center, and the business community. School wellness councils and other existing broad-based groups may function in this role. This committee will provide input, oversight, and guidance in developing a SDH program.

3. **A lead agency:** this is the agency that will take responsibility for guiding the project, convening the advisory committee and implementing the services; in most cases it will also be the recipient of any grant awards.
4. **A dental director:** To ensure quality, all programs must have a formal relationship with a dentist who will provide necessary consultation, oversight and guidance to the program. This person may or may not provide direct services; and could be part time through a contractual relationship with the sponsoring organization.
5. **Staff:** Determination of staffing will depend upon the local plan, but the following functions should be taken into consideration: marketing/publicity/community relations; billing and data entry; administrative oversight; clinical quality and compliance; operations management; direct clinical services; outreach to parents; follow up and referral.
6. **Evaluation:** Evaluation is an essential activity for program improvement. At both the program level and the state level, an evaluation plan should be formulated. Statewide data to be collected should include 1) a basic data set describing utilization of services, and 2) a surveillance and monitoring plan. The National Call to Action to Promote Oral Health, issued by the Surgeon General in 2003, emphasizes the need for action plans with monitoring and evaluation. A strong state plan for oral health will include a statewide monitoring or surveillance system, according to both the CDC and the Association of State and Territorial Dental Directors. Thirty-four of the 56 states and U.S. territories conduct basic screening surveys to monitor child oral health status and submit their data to National Oral Health Surveillance System. West Virginia is not among them. Monitoring of caries experience and untreated decay consistent with the National Oral Health Surveillance System (NOHSS) would allow

The National Call to Action to Promote Oral Health, issued by the Surgeon General in 2003, emphasizes the need for action plans with monitoring and evaluation to improve oral health.

A strong state plan for oral health will include a statewide monitoring or surveillance system, according to both the CDC and the ASTDD.

WV to compare progress with other states and to plan better for improvement. Using scientific sampling methods and data reporting software, a monitoring system could be incorporated into a school-based program. Common measures collected by the CDC and ASTDD are percent of third graders with sealants, untreated tooth decay and caries in 3rd graders. The prevalence of decay in children is measured by assessing caries experience (if they have ever had decay and now have fillings), untreated decay (active unfilled cavities), and urgent care (reported pain or a significant dental infection that requires immediate care.).

7. **On-going technical assistance:** To improve the oral health of youth in WV, school-community partnerships and local planning are essential. However, local communities do not have time to “reinvent the wheel.” Having available technical assistance will facilitate the expansion of local programs to address this complex issue. Such assistance would include:
 - a) Tool kits/resources on planning, needs assessment, implementation
 - b) Quality assurance, continuous quality improvement, and standards for best practices;
 - c) Semi-annual meeting of grantees; annual conference; regional planning and implementation meetings
 - d) Training of primary care providers and nurses
 - e) Data reporting and analysis
 - f) Implementation of surveillance/monitoring system: training; sampling, reporting

SUSTAINING SERVICES

Successful programs will need to develop a plan for ongoing support. Contributing to sustainability are state policies that address current reimbursement and scope of practice issues and a diversified funding base that includes grants, local contributions, and effective practice management.

WHAT SCHOOLS CAN DO

- Incorporate oral health into curriculum
- Eliminate soft drinks
- Conduct dental screenings
- Provide leadership from school nurse/others for coordination, identification of students, getting parent consent
- Provide space/transportation and time for oral health services and screenings
- Educate parents
- Identify children with special needs; assess need for dental access. (pregnant teens, students with learning and developmental disabilities, cerebral palsy, autism, asthma, diabetes, HIV)

WHAT SCHOOL- BASED HEALTH CENTERS CAN DO

- Incorporate a caries risk assessment tool into primary care practice
- Reach out to pregnant teens
- Train staff to adequately/thoroughly assess for risk and for caries
- Have protocols for evaluation and treatment of dental abscesses and mouth trauma/avulsed teeth
- Adequately educate patients i.e., incorporate patient education/teaching into patient visits e.g., demonstrate tooth brushing; have students actually brush their teeth for two minutes while at the SBHC

- Reach out to children with special health care needs (CSHCN): Learning Disability, Developmental Disability, Cerebral Palsy, Autism, Asthma, Diabetes, HIV)

WHAT DENTISTS CAN DO

- Work with local schools and other providers to establish strong referral and follow-up systems
- Provide leadership for implementing school-based/linked services
- Serve as advisors to school and oral health coalition to address unmet need

WHAT STATE POLICY MAKERS CAN DO

The West Virginia Chamber of Commerce advocates the development of a comprehensive plan to address the issue of poor oral health in West Virginia. Their position paper states, “the Chamber recognizes that oral health is an integral part of personal health and effective prevention solutions are a good investment,,,particularly for the children of this state. The ...Chamber supports initiatives to expand access to oral health screening and treatment in school-based and community settings (including fluoride varnish and dental sealant application for children), coordination of the practice regulations of the various professional organizations to increase access to oral health services, initiatives to recruit and retain oral health providers in rural and medically underserved areas, use of tele-dentistry and tele-health applications, where appropriate, to connect patients in rural areas to oral health screening and treatment resources and greater awareness in our communities and the workplace of the importance of maintaining good oral health.”

To deliver widespread caries prevention...interventions outside a dentist’s office will be required...

If local health professionals implemented comprehensive elementary school-based caries prevention programs, local practices would increase access to care and ... it would lead to larger practice sizes, fewer emergencies, and greater income.

- *Neiderman, et al, JADA, August 2008*

CONCLUSION

Improving the oral health of West Virginia’s youth will require sustained commitment at all levels and by many stakeholders - communities, parents, health providers, local and

state governments. School based programs address some of the barriers to access but their success ultimately will depend upon systemic policy changes regarding reimbursement, insurance coverage, and scope of practice issues. An evaluation of the ForsythKids Program in Massachusetts concludes that comprehensive school based programs can quickly overcome multiple barriers to care and in fact, may result in more efficient use of private provider office time.²³

Appendix 1

Survey Results School-Based Dental Services in West Virginia 2006-2007 Revised June, 2008

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Survey Results
School-Based Dental Services in West Virginia
2006-2007

Purpose: A survey of school nurses and school based health centers (SBHCs) was conducted from June – August 2007. The purposes were:

- 1) To gain a better understanding of the extent of school-based dental services in WV; and
- 2) To gather opinions regarding dental health needs of students and school based dental services.

Method: In June, 2007, participants at the School Health Services conference were asked to complete the survey and return it during the conference. About 80 surveys were returned. The survey was also placed on www.surveymonkey.com and the WVDE Coordinator of Health Services sent an e - mail message to all school nurses, urging those who had not completed the survey to do so. Concurrently, school based health centers received an e - mail message from the survey coordinator, inviting them to complete the survey online. Over the summer, the school nurses in counties that had not responded received two follow up e - mail requests.

Respondents first answered questions about dental health services provided in their county during that school year, 2006-2007. They were asked to estimate the number of schools and the number of children receiving particular types of dental services. After describing the services, respondents were asked for their opinion on issues related to access and priorities for school based dental services in their counties. Data were analyzed using the various reports available at www.surveymonkey.com. The final draft of the report was sent back to the school nurses and SBHCs for review prior to release.

Results: One hundred thirty seven surveys were completed, representing 48 out of 55 counties. Eighty- five of the respondents were school nurses from 46 different counties. This represents about one-third of the 256 certified school nurses in WV. The rest of the responses were from SBHC staff or “other” which usually meant a primary care center administrator. The seven counties not represented in this report are Doddridge, Gilmer, Lewis, Mason, Roane, Summers and Tyler.

Findings: Table 1 summarizes the information about services in each county. Attachment 1 is a profile for each county based on information from the surveys and follow up correspondence with school nurses. It should be noted that while a county may report certain services, the services often are limited to a single school or a particular grade and that the information may be incomplete.

1. The majority of school- based dental services in WV are provided by school nurses and are limited to classroom education, screenings, assessments, fluoride rinse, and referrals. Nine counties report that their only services are to refer families to local dentists when children are referred to the school nurse by a teacher. These counties are Putnam, Preston, Monroe, Braxton, Hancock, Wetzell, Randolph, Upshur and Taylor. (Putnam County has services at the Vocational School but just for the students attending that program.)

2. Very few counties have any school based prevention or treatment services (sealants, varnish, exams by dentists, or restorative care). Nine counties offer sealants but at least three of those served fewer than 50 students. Four counties have varnish programs and seven counties provide any restorative care.

3. Five counties appear to have fairly comprehensive school based dental services (arbitrarily defined as sealants, exams, and restorations). For three of them - Ritchie, Fayette, and Calhoun – services are provided through the school based health centers. Kanawha and Ohio counties work with their local dental associations to provide services to children meeting certain income criteria.

4. Ninety- nine percent of respondents indicated that dental care is extremely or somewhat needed. When asked their opinions regarding access, need, and importance:

- 93% of respondents said that over 20 % of their students have difficulty getting needed care;
- 63% knew of no one in their communities who provided sealants, restorative care, or exams to children without insurance or who cannot afford care;
- The three most common barriers to care were perceived to be lack of money/insurance; parent perception that dental care is not important; and few dentists who will accept Medicaid.

5. The majority of respondents identified school based screening and dental clinics as high priorities for promoting dental health among children. As for appropriate dental health activities in schools, the following options were recommended by at least sixty percent of the respondents: annual dental screenings (86%), referral to dentists (80%), treatment services in school based clinics (61%), mouth guard protection programs and fluoride rinse programs.(61%) Surprisingly, only 44% selected sealant programs. School - based sealant programs are highly recommended as a cost effective public health preventive measure. It may be that respondents are not knowledgeable about this.

Tables 2-8 display the responses to these questions. For the most part, there were no significant differences between the opinions of school nurses and SBHC/Others.

Discussion

This survey was a first attempt at getting a statewide picture of school based dental services. Although it is not a scientifically selected representative sample, it does provide useful information about the dental needs of school age children in 48 counties in West Virginia. Not only did respondents voice the tremendous need for better and more dental care for children; they also are willing to support this cause, as evidenced by 81 % who said they would be willing to help with developing school based services in their communities.

Another observation is that there appears to be some confusion with terminology among school nurses with regard to what they are “allowed “to do. Some nurses indicate that they are doing assessments; others say they are screening; some say they are no longer allowed to do either; and others used the term “inspections”. In December, 2006 the WV Council of School Nurses issued a revised statement on the role and scope of school nurses with regard to dental assessments. This may have resulted in some confusion that needs further clarification.

Conclusions and Recommendations: The respondents to this survey reinforce the notion that access to dental services is a serious problem in West Virginia. They also support expansion of school based dental clinics and requiring dental exams at school entry. Based on the survey results, consideration should be given to:

1. Clarification of the role and scope of practice for school nurses: see attached recommendation from Council of School Nurses.
2. Hiring of registered dental hygienists by county school systems: Three school systems (Ohio, Monongalia, and Kanawha) reported that they employ registered dental hygienists. They also have some of the stronger dental programs. This model should be considered as one way to strengthen local capacity for developing partnerships with the local dental community. Funding of shared position(s) at the RESA level might also be considered.
3. Strengthening the relationship and coordination between the OMCFH- funded hygienists, school systems, and the private dental community: Opportunities to use these hygienists for more than classroom education should be considered. For example, the community hygienists’ role should include leadership in coordinating a school based dental services program involving community dentists.
4. Development of recommendations and mechanisms to encourage private dentists to volunteer in their schools;
5. Addressing the issue of Medicaid reimbursement;
6. Design and promotion of model school based dental services, including sealant programs, in all counties;

7. Policies requiring dental exams and identification of “dental homes” at school entry and/or certain grades.
8. Technical assistance to communities/wellness councils for developing their school based oral health services programs.

Table 1
School Based Dental Services by County, 2006-2007

COUNTY	SCREENINGS	ASSESSMENTS	REFERRALS	FLUORIDE	VARNISH	SEALANTS	EXAMS	RESTORATIVE
Barbour				X				
Berkley				X				
Boone		X	X	X				
Braxton	No school based services							
Brooke	X	X	X				X	
Cabell	X	X	X				X	
Calhoun	X	X	X	X	X	X	X	X
Clay	X	X	X	X				
Doddridge	Did not respond to survey							
Fayette	X	X	X	X	X	X	X	X
Gilmer	Did not respond to survey							
Grant		X		X				
Greenbrier			X	X				
Hampshire				X				
Hancock	No school based services							
Hardy	X		X	X				
Harrison	X		X					
Jackson	X	X	X	X		X	X	
Jefferson	X	X	X					
Kanawha	X	X	X			X	X	X
Lewis	Did not respond							
Lincoln	X	X	X	X		X	X	
Logan	X		X	X				
McDowell	X	X	X	X				
Marion	X		X					
Marshall	X	X		X	X	X	X	
Mason	Did not respond							
Mercer	X	X		X				
Mineral	X	X	X					
Mingo	X	X	X					
Monongalia	X	X	X	X				
Monroe	No school based services							
Morgan	X		X	X				

COUNTY	SCREENINGS	ASSESSMENTS	REFERRALS	FLUORIDE	VARNISH	SEALANTS	EXAMS	RESTORATIVE
Nicholas	X	X	X					
Ohio	X	X	X	X	X	X	X	X
Pendleton	X			X				
Pleasants		X	X					
Pocahontas		X	X					
Preston	No school based services							
Putnam	No school based services							
Raleigh	X		X				X	
Randolph	None other than referrals		X					
Ritchie	X	X	X	X		X	X	X
Roane	Did not respond							
Summers	X	X						
Taylor			X					
Tucker	X		X				X	
Tyler	Did not respond							
Upshur	No school based services							
Wayne	X	X	X	X			X	
Webster			X	X				
Wetzel	No school based services							
Wirt	X							
Wood	X	X	X	X				
Wyoming	X	X	X			X	X	
TOTAL	31	26	33	24	4	9	14	5

Table 2

Q 5. How would you consider the need for access to preventive dental services and dental care among your students?

	All respondents	School nurse	SBHC and Other
Extremely needed	80.5%	78.3%	85.3%
Somewhat needed	17.3	20.5	8.8
Not a need; services are available	2.3	1.2	5.9

Table 3

Q 6. What percentage of school age children in your schools would you estimate have difficulty obtaining the dental care they need?

	All respondents	School nurses	SBHCs and Other
Under 20%	6.5%	9.3%	3.0%
20-50 %	59.4	66.7	42.4
Above 50%	34.2	24.0	54.6

Table 4

Q 7. Are you aware of anyone in the community who offers sealants, x rays, or restorative care to children who do not have insurance or cannot afford care?

	All respondents	School nurses	SBHCs and Other
Yes	37.3%	33.8%	43.3%
No	62.7	66.2	56.7

Table 5

Q 8. For those children who have difficulty obtaining needed dental care, what do you think are the three most frequent barriers?

Lack of money/inadequate insurance	72.4%
Dental care is low priority/low dental IQ	71
Few dentists who accept Medicaid	57
Transportation	43
Shortage of dentists	23.4
Don't know how or where to obtain care	20.3

Table 6

Q 9. Which dental health promotion activities do you consider appropriate in schools? (Check all that apply)

Annual dental screenings to detect untreated dental disease	85.9%
Referral of students with dental problems to dentists	79.7
Dental treatment services in a school based clinic	60.9
Mouthguard protection in school sports programs	60.9
Fluoride mouth rinse or fluoride tablet program	55.5
Brushing and flossing in the classroom	49.0
Dental sealant program	43.8

Table 7

Q 10. How can WV help to promote better dental health among children? (Check all that apply)

Support school based dental screening and referral programs	81%
Support school based dental clinics for low income children	61
Require dental examinations at school entry	54
Support school based dental sealant programs	37
Support mouth guard programs for students in sports	31.8
Expand community water fluoridation	21.4

Table 8

Q 11. Would you be interested in helping to develop a school based dental program in your county?

	All respondents	School nurse	SBHC and Other
Yes	81%	77%	96%

Attachment 1

County Profile School- Based Dental Health Services in West Virginia 2006-2007

Introduction: Below are brief descriptions of school based dental health services for each county in West Virginia. This is a working document and will be updated as needed. Sources for this information are primarily school nurses and school based health centers who responded to a survey during the summer of 2007. Other sources include the annual data compiled by the WV School Health Technical Assistance and Evaluation Center at Marshall University and information from individual community health center directors and school nurses.

Please note that 1) this information may be incomplete; 2) it does not include descriptions of the classroom education which most of the school nurses and community hygienists provide; and 3) the numbers for students receiving services are estimates provided by respondents.

County - Specific Information

1. Barbour: Fluoride to 370 students grades K-5 by school nurse
2. Berkeley: Fluoride rinse offered to grades 1-5 by school nurses with parent volunteers;
3. Boone: Assessments by school nurses in 15 schools, approx 493 students preK-12; 122 students referred to dentists; 156 rec'd fluoride
4. Braxton: one school nurse reported; no services are provided.
5. Brooke Co: School nurse reports 860 students in 10 schools, Pre K, K, 3rd and 5th grades rec'd screenings, assessments, and referral services; 550 fifth graders in 2 schools had dental exams by two community dentists and a hygienist. In addition, West Liberty State College offers sealants, x rays, and cleanings to children without insurance but it is not a school based program.
6. Cabell: About 400 students were assessed by a community dentist/hygienist; 100 were referred to a dentist for follow up; and the dentist actually completed about 50 exams. The school nurses indicated that few other services were provided by them, other than the screenings at the two SBHCs.
7. Calhoun Co : Minnie Hamilton Health Center operates three school based health centers: Pleasant Hill ES, Calhoun County HS and MS. Oral health services were provided to 35 students by a local dentist using portable equipment at the SBHCs. Services included exams, cleanings, varnish, sealants and restorative work. There were 65 student visits for dental care. One school nurse responded, indicating that the only service provided in other schools was referrals.

8. Clay: Screenings and referrals for about 200 students PS-K, fluoride to 1200 students in five schools grades K-5 by school nurse and community hygienist.
9. Doddridge: No response
10. Fayette: School nurses provide screenings/assessments, referrals; New River Health Association, through their SBHCs, assesses for oral health during well child exams; in addition they initiated dental services late in the school year with portable equipment, screening about 100 students, and referring to a dentist about 40 students.
11. Gilmer: No response
12. Grant: Screenings, assessments, referral for 460 students; and fluoride to 750.
13. Greenbrier: The school nurses conduct oral assessments on new students (approximately 450); fluoride rinse in 9-10 schools; the two SBHCs at Greenbrier West HS and Western Greenbrier MS High that are operated by Rainelle Medical Center also assess and refer their students.
14. Hampshire: Fluoride in 6 schools K-5, 1500 students.
15. Hancock: Two school nurses reported no services last year.
16. Hardy: Screenings by school nurse to 30 students; fluoride to 600
17. Harrison: screenings referrals, 250 students PreK -12;
18. Jackson County Schools: With portable equipment provided by the Office of Maternal, Child and Family Health and the Division of Primary Care and through coordination by the SBHC staff, a local dentist provided on site services including cleaning, fluoride treatments, and sealants to students in ten Jackson County Schools. 82 students benefited from this service.
19. Jefferson: screenings, assessments, referrals at 3 schools, 750 students;
20. Kanawha: The lead school nurse reports that services were provided to 53 schools last year; approx 18,000 students had the services available; their four School Dental Health Educators, who are all dental hygienists, did inspections on all preschoolers, kindergarteners, 3rd graders and as many 8th graders as they could work in for a total of 11,635 students. Their school based dental clinics offer sealants, exams and restorative care. They also have an agreement with CAMC Dental Clinic and refer students there when they require very extensive work. That is usually only a few students each year. The school based sites see any student who meets income eligibility guidelines. The Kanawha Dental Association volunteers their services every year.
21. Lewis: No response
22. Lincoln: The school nurses report that screenings/assessments, referral and fluoride are provided in their schools. Last year 200 students were screened/ assessed. The school nurses provide fluoride treatments; Valley Health Systems provided other services. VHS

reports screening, assessments, referrals, sealants, and exams in 5 schools. About 200 students were served in 06-07 with 100 receiving sealants and 100 referred to a dentist for restorative care. In addition, the three SBHCs operated by Lincoln Primary Care Center, assess for oral health as part of physical exam.

23. Logan: Screenings, referrals , fluoride at several schools, grades Pre-K through 12; by school nurses
24. McDowell County: The new SBHC at Mount View Middle and High Schools provided dental services to 128 students in 265 visits. Dental services included exams, cleaning, x-rays, sealants, as well as restorative treatment for problems identified. Unfortunately, these services are temporarily suspended until a new dentist is recruited. In addition, the school nurses report providing screenings/assessments to 4000 students and fluoride to 2300.
25. Marion: The two high school health centers operated by Mon Valley Health Association screen as part of their well child exam; the school nurses conduct kindergarten assessments.
26. Marshall: Two hygienists employed by the county health department provide services in the schools. A school nurse reported that in one school 370 students had screenings/assessments, 330 fluoride rinse, 250 varnish program, 250 sealants, and 360 had dental exams; (unclear as to whether this program extended to other schools or not.)
27. Mason: No response
28. Mercer County: A community dentist/hygienist provided screenings, assessments, referrals and fluoride to about 135 students K-2 last year.
29. Mineral: The school nurses conduct assessments/screenings and refer to local dentists. Last year, several hundred students at various grade levels were assessed and about 10% were referred.
30. Mingo: The school nurse reported that she conducted screenings, assessments, and referrals for 500 kindergarten students.
31. Monongalia: This county has a school employed Registered Dental Hygienist. She reports that last year 3,050 students were screened and assessed in grades Pre-K, K, 2nd, 4th, and 6th. 197 were referred to private dentists, local health departments, and the WVU Dental Clinic. Also, 230 oral health educational programs were provided to 4,160 students. She works closely with 9 school nurses. The hygienist along with parent volunteers provided fluoride to 4,000 students in 20 schools, grades K - 6th.
32. Monroe: One school nurse responded that there are no services currently but they are planning to implement a program with a local dentist in 07-08.

33. Morgan: A community dentist/hygienist provides screenings to 1st graders in four schools; last year about 200 students were screened; the school nurse provided fluoride to about 1200 students K- 5th grade and oral health education to 2600 students.
34. Nicholas: Two school nurses responded to the survey, stating that no services were being provided in their county because “dental screening cannot be done by school nurses”. The SBHC at Summersville MS/HS incorporates screenings and referrals into their well child exams; they report about 100 screenings and 20 referrals last year.
35. Ohio: This County has a school employed dental hygienist and a school based dental clinic that has operated since 1966. It is available to all children for all dental procedures, including operative, but their priority is those students who are uninsured for dental care. The clinic is sponsored by the Ohio County Board of Education and the Wheeling District Dental Society. Last year 2098 students were assessed; fluoride was provided in 18 schools; 240 students were referred for follow up care; 177 were examined by dentist; restorative care provided to 182 students; and sealants to 141. They schedule about 65 half- day clinics per year. Five to six local dentists rotate through and are paid a stipend. The annual budget for supplies and the dentists’ stipends is \$10,000; the RDH is paid by the Board of Education, with about ¼ of her salary from the OMCFH Children’s Dentistry Program.

In addition to the public schools, the Wheeling Elementary School Based Health Program, recently funded by the Sisters of St Joseph Health and Wellness Foundation, served about 80 students with screenings/assessments, and exams by a volunteer dentist
36. Pendleton: A dentist screened 55 pre- K children at four schools; fluoride was provided by the school nurse to 450 students, grades 1-6, at 3 schools.
37. Pleasants: The school nurse conducted assessments at 4 schools for 50 students; about half of whom were referred to dentists.
38. Pocahontas: The school nurse reports that she observes the need for dental hygiene while doing routine assessment; last year 80 pre K and K level students were assessed at 3 schools; about 15 were referred.
39. Preston: Two of three school nurses replied that no services are available; the other indicated that some services, including varnish, sealants, and restorative care were provided by local dentist but no data were provided as to the number of schools or students served.
40. Putnam: The school nurses reported that the only school based services are at the vocational school. This was not counted as it appears to be only for students in training.
41. Raleigh: This County has had a program for several years that is organized by local dentists and supported by the United Way. Every year, second graders are transported by school bus to the local health department dental clinic. One of the local dentists does

- an oral exam. Parents are sent the results of the exam and encouraged to make an appointment for follow up. The students also have a lesson from a dental hygienist while at the health department. About 900 second graders receive this service every year.
42. Randolph: One response from a school nurse; no services other than referral to dentists upon teacher referral.
 43. Ritchie: Ritchie Primary Care Association recently added dental services to their SBHC serving Ritchie HS and MS. Last year, 75 students received oral evaluations and treatment as needed. Altogether 88 visits were reported; one respondent also mentioned that WVU School of Dentistry and a Dr Spiker participated in Oral Health America, providing exams and sealants through a grant.
 44. Roane: There was no response to the survey. However, the Roane Family Health Center CEO reports that they have purchased a mobile unit and intend to use it for dental services for children and pregnant women. They are searching for a dentist.
 45. Summers: Summers County provides dental screenings for all students entering the pre-K program. Head Start contracts with a dentist from Huntington who screens their pre-K children and offers a fluoride treatment. Dr. Eckley and Dr. Miller perform a dental and orthodontic screening on all 2nd graders.
 46. No response
 47. Taylor County: One school nurse reported that she referred three students to a dentist for check up for toothaches.
 48. Tucker: one school nurse reported that the nurses provide screenings and referrals in two schools; a dentist provides dental exams; last year 53 students received exams.
 49. Tyler: No response.
 50. Upshur: No services reported other than classroom education.
 51. Wayne: At Spring Valley and Wayne High Schools a dental hygienist from Valley Health Systems saw individual students upon referral from the SBHC; 4 students were seen from each of the high schools. The school nurses report that they provided fluoride to several hundred students grades 1-5 and the county hygienist did classroom education with 9-12 graders.
 52. Webster: one school nurse responded that they had provided fluoride to 1400 students K-6; and several referrals to dentists, as well as classroom education
 53. Wetzel: The school nurse replied that no services are being provided in their schools; they have great need; and people with Medicaid must drive at least 30 miles to get care.
 54. Wirt: School nurse reports that they provided pre K screenings to 50 children by a community dentist/hygienist.

55. Wood: Six school nurses responded to the survey; they provide screenings/assessments and referrals for several hundred students and all indicated that dental care is extremely needed.
56. Wyoming: Two school nurses responded that 2nd graders in 7 schools receive screenings and referrals by the school nurse; assessments and dental exams by a community dentist. Last year about 300 2nd grade students received services.

Appendix 2

WEST VIRGINIA COUNCIL OF SCHOOL NURSES

RECOMMENDATION

For

DENTAL INSPECTIONS/SCREENINGS

It is the recommendation of the West Virginia Council of School Nurses that dentists conduct proper dental inspections/screenings for all children. W.Va. Code §30-4-15 defines the scope of practice of the dentist as examining, evaluating and diagnosing diseases, disorders and conditions of the oral cavity.

It is within the scope of practice of the certified school nurse to perform a nursing assessment of the oral cavity and recommend to the parent/guardian that further evaluation is needed when a student presents with signs or symptoms or need for examination of the oral cavity. It is the role of the certified school nurse to promote and/or provide oral health education in the school setting.

A letter communicating the results of the oral cavity assessment should be given to the parent or guardian, as soon as possible, when further evaluation is warranted. A method should be developed for tracking referrals and for encouraging follow-ups as needed. The West Virginia Education Information System (WVEIS) provides a method for recording and tracking dental screening results.

It is NOT the role of the certified school nurse to perform massive dental screenings. A total of 98% of West Virginia children have medical insurance and should be receiving a comprehensive physical exam (i.e. HealthCheck) annually with a dental screening. The health provider's dental screening results shall be valid up to one year and meet the requirements of dental screening, as indicate in West Virginia State Board of Education Policy 2525. The school nurse also needs to be aware of community services available to assist students in obtaining follow-up treatment.

DISCLAIMER:

The "Recommendation" of the West Virginia Council of School Nurses (WVCOSN) is not representative of West Virginia State Code or West Virginia State Board of Education recommendation or policy. This is a recommendation based on consensus, evidence-based practice reviews and current research from the WVCOSN. The WVCOSN is set forth by W.Va. Code §18-5-22.

The certified school nurse is responsible for utilizing nursing judgment and skill to determine the safest delivery of health care on an individual case-by-case situation in the West Virginia public school setting while protecting the welfare and health of the student. Every situation is unique and requires a collaborative team approach lead by the certified school nurse, which includes, but not limited to, the student, parents/guardians, school administrator, experts in the field and the student's primary health care provider, at the local level.

Appendix 2 – Definitions and Abbreviations

Caries: An infectious disease process

Examination: A detailed, comprehensive oral assessment completed by a dentist under appropriate conditions for purposes of diagnosis and treatment.²⁴

Preventive Dental Procedures: Professional measures to promote oral health and prevent disease injury; may include patient education, examination, prophylaxis, topical fluoride, systemic fluoride supplements, dental sealants, antimicrobial mouth rinses, and protective mouth guards.²⁵

Prophylaxis: Professional cleaning of the teeth.²⁶

School-Based Dental Program: Services are provided in the school by a community agency and include at a minimum: assessments/exams, fluoride supplementation, sealants, and arrangements for restorative care.

School-Linked Dental Program: Services are provided outside of the school through formal arrangements with a community dental provider.

Screening: A clinical assessment of oral health, distinguished from the dental examination by purpose (triage) and level of comprehensiveness (less detailed), facility/equipment (dental or non-dental setting), and training of examiner (dental professional or other health professional.)²⁷

Appendix 3



School-Based Health Technical Assistance and Evaluation Office

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January 16, 2007

Selected Resources for Dental Health Services in Schools

- ✿ **West Virginia Partners for Oral Health** www.oralhealthwv.org

- ✿ ***Clinical and Management Tools for Effective School-Based Dental Programs***

Dr. Murray Rosenthal, DDS, New York City. This is a detailed manual for school based dental services. It includes sections on appointment procedures, clinical management and protocols, quality assurance, billing, and management information systems. Source:

<http://www.healthinschools.org/sh/dental/toolkit.asp>. In addition, this website offers a long list of other information and tools useful in building school based dental programs including background information, resources, policy initiatives, community and state information, financing issues, and links: <http://www.healthinschools.org/dentalhealth.asp>

- ✿ ***The Safety Net Dental Clinic Manual***

An online, practical reference tool that highlights aspects of dental clinic development and operations. The manual was developed with support from the Maternal and Child Health Bureau and is a collaborative project of the Ohio Department of Health, the Indian Health Service, and the Association of State and Territorial Dental Directors. It includes information on partnerships and planning, facilities and staffing, financing, clinic operations, and quality awareness and improvement. Links to sample policies, budget worksheets, design tips, equipment photographs and Web sites are also included. The manual is targeted toward beginners interested in starting a dental clinic or those wanting to improve an existing dental clinic facility or existing dental services. The manual is hosted and maintained by the National Maternal and Child Oral Health Resource Center and is available at www.dentalclinicmanual.com

- ✿ **The National Maternal and Child Oral Health Resource Center**

A comprehensive source of information; www.mchoralhealth.org . Includes

1. Bright Futures Oral Health Toolbox;
2. Dental Sealant Guide;
3. Open-Wide, a series of four self contained on line modules for health and early childhood professionals to promote oral health in community settings.
4. A Health Professional's Guide to Pediatric Oral Health Management: 7 self contained online learning modules that include oral health screening, referral processes, parent anticipatory guidance
5. Tip Sheets, Fact Sheets, Parent Handouts, Protocols

✿ **Seal A Smile Portfolio**

A resource guide for communities interested in establishing school based or school linked dental sealant programs, Includes community collaborating, planning, equipment, supplies, implementation, forms, evaluation, funding sources, guidelines for sealant use, educational handouts. Children's Health Alliance of Wisconsin: <http://www.chawisconsin.org/oralhealth.htm>

✿ **Association of State and Territorial Dental Directors**

Several resources related to best and promising practices, website links, policy, state level organization; community planning, child and adolescent oral health issues; state profiles
<http://www.astdd.org/index.php?template=main.html>

✿ **Center for Health and Health Care in Schools**

Several articles on dental program development; a Power Point presentation; Dr Rosenthal's Tool Kit; <http://www.healthinschools.org/dentalhealth.asp>

✿ **Articles/Tools**

Integrated Dental and Mental Health in Primary Care, Sharon Heur, Family Centered Care: good discussion of how to incorporate dental and mental health services in a primary care setting and linkage with school based dental programs. Available in hard copy from us.

Oral Health State Report: the National Oral Health Grading Project: compares states on several measures; www.oralhealthamerica.org

Community Roots for Oral Health: Guidelines for Successful Coalitions. USDHHS, HRSA, www.doh.wa.gov/cfh/oral_health/community_roots.htm

Policy Statement on Use of a Caries Risk Assessment Tool: American Academy of Pediatric Dentistry, 2002: Recommends a caries risk assessment tool for dental and other health care providers.

Sample Dental Sealant Protocol, Wisconsin: includes policy, procedure, standing medical orders, and websites.

✿ **Children's Dental Health Project**

<http://www.cdhp.org/>. This site includes a handbook on contracting dental services through an FQHC and includes a model contract for partnerships:

<http://www.cdhp.org/downloads/FQHC%20Handbook.pdf>

ENDNOTES

- ¹ School Based Dental Sealant Programs, CDC, Division of Oral Health, http://www.cdc.gov/print.do?url=http%3A%2F%2Fwww.cdc.gov%2FOralHealth%2Ftopics%2Fdental_sealant_programs.htm#3
- ² Fact Sheet, Children's Oral Health , Centers for Disease Control and Prevention. http://www.cdc.gov/OralHealth/publications/factsheets/sgr2000_fs3.htm
- ³ "Oral Health and Learning", National Maternal and Child Oral Health Resource Center, <http://www.mchoralhealth.org/PDFs/learningfactsheet.pdf>
- ⁴ Ibid.
- ⁵ BMS 416, 2003 Medicaid <http://oralhealthwv.org/newsarticles/cg122407.htm>
- ⁶ CDC Oral Health Maps OnLine: URL: <http://apps.nccd.cdc.gov/gisdoh>
- ⁷ http://www.cdc.gov/OralHealth/publications/factsheets/dental_caries.htm
- ⁸ http://www.cdc.gov/OralHealth/topics/dental_sealant_programs.htm
- ⁹ http://www.ada.org/prof/resources/pubs/jada/reports/report_sealants.pdf
- ¹⁰ Preventing Chronic Diseases, Investing Wisely in Health , Preventing Dental Caries, CDC, DHHS; <http://www.cdc.gov/nccdphp/publications/factsheets/Prevention/oh.htm>
- ¹¹ Best Practice Approach: Use of Fluoride: School based Fluoride Mouthrinse and Supplement Programs, ASTDD, <http://www.astdd.org/index.php?template=bestpracschoolb.php>
- ¹² Healthy Kids and Families Coalition
- ¹³ Correspondence with Phil Edwards, OMCFH, WVDHHR, August, 2008
- ¹⁴ <http://hpsafind.hrsa.gov/HPSASearch.aspx>
- ¹⁵ http://www.statemaster.com/graph/hea_tot_den_percap-health-total-dentists-per-capita
- ¹⁶ Oral Health America National Grading Project , 2003 <http://www.oralhealthamerica.org/pdf/2003ReportCard.pdf>
- ¹⁷ United Way of Central West Virginia Health Care Access Project; Experiences in Receiving Health Care by WV CHIP and Medicaid Families, October 2004. <http://www.oralhealthwv.org/library/flyers-handouts/ResearchOralHealth.pdf>
- ¹⁸ Attitudes of West Virginia Dentists Toward Publicly-Sponsored Patients and Children with Special Health Care Needs, WVDHHR, OMCFH, date unknown
- ¹⁹ Neiderman, Richard et al, A Model for Extending the Reach of the Traditional Dental Practice – the ForsythKids program, JADA, Vol 139, August 2008
- ²⁰ American Academy of Pediatric Dentistry, Definition of a Dental Home; http://www.aapd.org/media/Policies_Guidelines/D_DentalHome.pdf
- ²¹ Surgeon General's Report\Oral Health Resources, U.S. Department of Health and Human Services. *National Call to Action to Promote Oral Health*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Dental and Craniofacial Research. NIH Publication No. 03-5303, Spring 2003. <http://www.surgeongeneral.gov/topics/oralhealth/nationalcalltoaction.html>

²² Best Practice Approach: Use of Fluoride: School based Fluoride Mouthrinse and Supplement Programs, ASTDD, <http://www.astdd.org/index.php?template=bestpracschoolb.php>

²³ Neiderman, et al

²⁴ Casamassimo P. 1996. Bright Futures in Practice: Oral Health. Arlington, VA: National Center for Education in Maternal and Child Health, p 119

²⁵ Casamassimo P. 1996. Bright Futures in Practice: Oral Health. Arlington, VA: National Center for Education in Maternal and Child Health, p 120

²⁶ Casamassimo P. 1996. Bright Futures in Practice: Oral Health. Arlington, VA: National Center for Education in Maternal and Child Health, p 121

²⁷ Casamassimo P. 1996. Bright Futures in Practice: Oral Health. Arlington, VA: National Center for Education in Maternal and Child Health, p 127