

**STATE DENTAL SEALANT
DEMONSTRATION
PROJECT**

STATE DENTAL SEALANT DEMONSTRATION PROJECT

2009 – 2010

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EXECUTIVE SUMMARY

The Maryland Department of Health and Mental Hygiene's Office of Oral Health (OOH) received a grant award from the Centers for Disease Control and Prevention (CDC) that was entitled *State-Based Oral Disease Prevention Program*. The grant was built upon the existing efforts of the OOH to plan, implement and evaluate population-based oral disease prevention and promotion programs.

The demonstration project, a follow-up to the 2005-2006 Maryland public school children survey, was designed to assess the current status of oral health among school children in Maryland public schools. The OOH partnered in the effort with the University of Maryland Dental School, which had expertise and experience in statewide dental assessment, surveillance and prevention activities. The goal was to reduce the prevalence of dental caries.

A statewide demonstration program was conducted at ten elementary schools that were selected according to sampling needs. Dental screenings and sealants, when indicated, were provided to third graders in public school elementary schools from 2009 to 2010. By the end of the funding period, the dental sealant demonstration project contributed to policies and programs supporting statewide oral disease prevention and community-based public health prevention services for prioritized populations.

ACCOMPLISHMENTS

The following specific services were successfully provided by this research team:

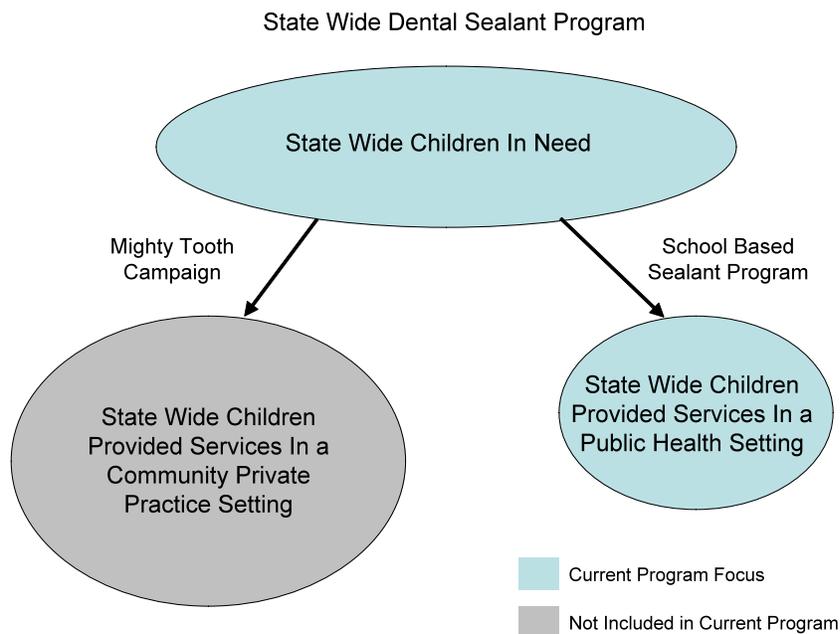
1. Assign duties to or recruit and hire a School Oral Health Program Administrator to:
 - a. Provide administrative expertise and oversight to the dental sealant demonstration project and other related school oral health initiatives;
 - b. Develop and maintain partnerships with administrative, school and school health agencies and organizations;
 - c. Assist in the collection and monitoring of schoolchildren's oral health data;
 - d. Serve as a liaison for statewide school oral health services initiatives with external partners.
2. Conduct and complete a dental sealant demonstration project based on a scientific sample of schoolchildren.
3. Conduct and complete all planning activities for the dental sealant demonstration project:
 - a. Regional, school and population sampling;
 - b. Personnel hiring for the dental sealant demonstration project;
 - c. Equipment and supplies purchasing;
 - d. Materials development;
 - e. Obtain necessary Board of Education, parental and Government permission;
 - f. Contact local school personnel for negotiation, scheduling of oral exams and sealant application process and agreement to conduct the project;
 - g. Obtain approval from appropriate Institutional Review Boards (IRB);
4. Conduct and complete the dental sealant demonstration project including the following:
 - a. Conduct appropriate health education and outreach activities;
 - b. Develop and disseminate the parent questionnaire;
 - c. Oversee the onsite provision of dental sealants to selected schoolchildren with the necessary personnel and equipment;
 - d. Determine body mass index (BMI) of selected schoolchildren;
 - e. Collect all pertinent data;
 - f. Analyze all data including oral health status, dental sealant need, dental sealant provision, and BMI calculation;
 - g. Evaluate the project including recommendations for a statewide dental sealant initiative;
 - h. Provide formal report to the Department on all survey activities.
6. Submit a report to the Department on the findings with recommendations for a statewide initiative which include but is not limited to the following items:

- a. A financial model including sources of revenues, expenditures, investment in equipment costs and salaries;
- b. Appropriate schools to be targeted;
- c. Locations which would obtain the greatest benefit from this project;
- d. Logistics of coupling BMI calculation for schoolchildren with dental screening and provision of dental sealants.

RECOMMENDATIONS FOR A STATEWIDE DENTAL SEALANT INITIATIVE

One of the more striking findings of this research team is the recognition that the capacity to provide sealants in a school based setting is very limited and must be coordinated with and supplemented with other outreach efforts. As a consequence of our findings, it is the recommendation of this research team that a Statewide Dental Sealant Initiative should not be limited to school based school located programs. It is our belief that a multi-tiered approach similar to that which follows be considered and utilized:

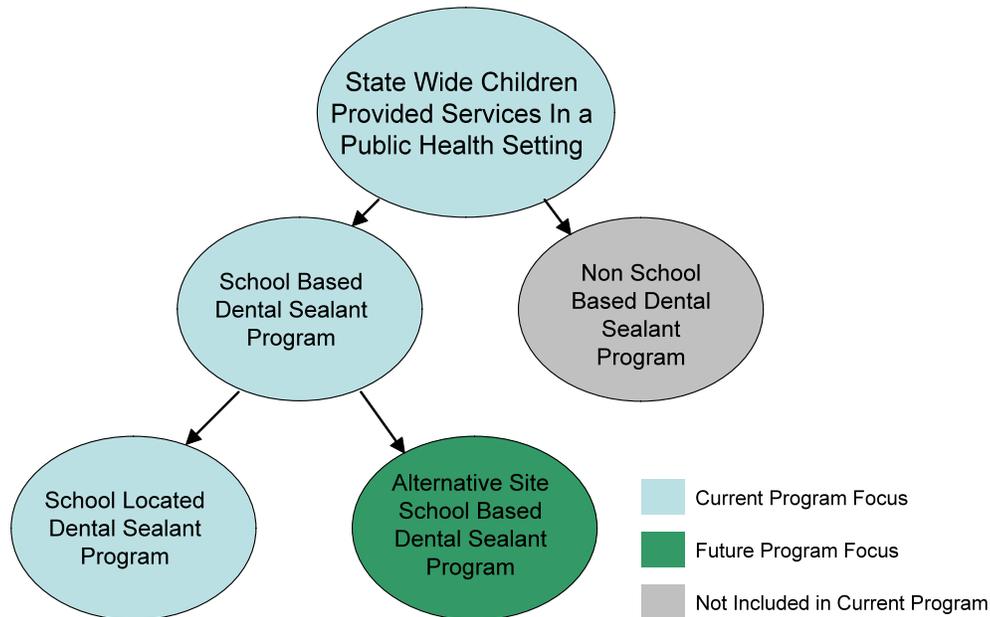
Level 1



- **Private Market** – It is the recommendation of this research team that the “Community Private Practice Setting be thought of as an integral and important component to any successful state wide sealant program. It is only the Private Practice Market that has the capacity to provide the care needed to the vast number of children that may be in need. The focus of the Public Health Practice Setting should be to address particular areas of need where the Private Market has not worked well.

Level 2

State Wide Dental Sealant Program



- **School Based School Located Programs** – School based school located dental sealant programs constitute a viable method to offer an oral disease prevention program. However, it is the recommendation of this team that this customary approach be included as just one part of a multi part outreach effort. Given the logistical difficulties of providing sealants within a school located environment and the vast number of children in a state that might be eligible for and the target to receive dental sealants it is important to consider and include it as part of the overall program with other modes of delivery. Further study is warranted to demonstrate the feasibility of other modalities and the interaction of these modalities with traditional school based programs. Other modalities may include the use of alternative program sites and the use of the existing public health infrastructure to augment school based programs. It is the recommendation of this research team that an extended sealant demonstration project be included in the upcoming state survey. One focus of this extension should be to further explore the use of alternative locations as part of a school based dental sealant program.
- **Alternative Program Sites** – To determine in part the feasibility of utilizing an alternative site, we selected one of our schools to participate in the program by

transporting the third graders at Gwynn's Falls Elementary School by chartered bus to the National Museum of Dentistry. Baltimore has approximately 120 third grade classes across the city. The use of a centralized alternative site may make unnecessary the transportation of equipment, the adaptation to a new and changing environment, an achievement of economic efficiencies and the possibility of being able to offer school children an additional benefit above and beyond the sealant program it self. Although we recognize the uniqueness of having a "National Dental Museum" in our back yard, it is our belief that every community has a facility, medical office, community center, professional education site that would offer added value above and beyond the sealant program itself. This approach would encourage partnerships with other health disciplines again expanding the value of the program. It is the recommendation of this research team that this approach be further tested as part of an extension of this demonstration project. Although our efforts showed that this approach is feasible, additional information should be obtained. To accomplish this, it is the recommendation of this research team that an extended demonstration project be included as part of the upcoming state survey.

- **Use of Existing Public Health Infrastructure** – Existing public health infrastructure can be used as an extension of a traditional school based school located sealant program or used independently. In conjunction with a traditional school based school located sealant program this approach would be used to offer students with a recommendation for a sealant but not able to receive it during a school visit an alternative. As an addition to a school based school located sealant program students with a demonstrated need not able to receive a sealant during the time allotted would be given a prescription and coupon redeemable at an authorized provider. As part of an independent program, a provider would visit a school without any intention of placing sealants during the school visit and instead provide students with a prescription and coupon redeemable at an authorized provider. Dental and dental hygiene schools and extensions thereof are particularly well suited to organize and staff such a project. Multidisciplinary community health centers also are particularly well suited to organize and staff such a project. It is the recommendation of this research team that this approach be tested as part of an extension of this demonstration project. To accomplish this, it is the recommendation of this research team that an extended demonstration project be included in the upcoming state survey.
- **Mighty Tooth** – Mighty Tooth, the cartoon character, web site, poster, billboard and animation campaign was successfully integrated into the sealant demonstration project. It is our belief that the Mighty Tooth campaign or some other similar outreach and publicity campaign is needed to stimulate the demand for services within the private practice market. Increase demand for sealants at private offices has the potential to reduce the overall demand for dental sealants within public health settings. A reduced burden on public health setting would make the likelihood of success greater for school based programs. It is the recommendation of this team that the Mighty Tooth campaign be continued, optimized and shared with other states for their use.

- **Moving Company** - Using a moving company to transport the supplies and equipment proved to be an excellent idea. The items arrived on time, were picked up as school ended and were secure on the truck. We did not have to worry about storage or our dental teams lifting heavy equipment or being delayed in traffic with needed supplies or materials. It is the recommendation of this research team that future dental sealant placement program plan for and utilize a professional moving service.
- **Instructional Video** - A 20 minute instructional training video was made that demonstrated the proper use of the tools for taking the Body Mass Index (BMI) measurement, use of the portable dental equipment and the procedure for screening and placement of sealants. The use of the technology was so successful for the training of our dentals teams, consideration should be given to the use of video for patient education as well. It is the recommendation of this research team that instructional training videos be included as part of a future dental sealant placement program.
- **Dental Teams** – Recruiting dentists to participate turned out to be much more difficult than we anticipated. To solve this dilemma we found it necessary to be creative and recruit in a method that looked beyond traditional providers. Recognizing the value of resources that are available at a dental or dental hygiene school we expanded our search to include dental hygiene students, pediatric dental residents and dental faculty. It is the recommendation of this research team that as part of a future dental sealant placement program that recruitment efforts be widespread and include all persons allowed by law to perform the services that are needed.
- **Sealant Placement and Specialized Equipment/Materials** – Sealant placement in an adapted dental environment proved to be much more difficult than anticipated. To assist with the placement we provided the teams with various new equipment, materials and supplies. One promising new technology that would seem to improve sealant placement efficiency is the “Isolite” system. This technology is a single unit device which uses disposable mouthpieces to provide retraction, illumination and suction all at once. It is the recommendation of this research team that as part of a future dental sealant placement program that “Isolite” be utilized as appropriate and assed for further determination if it should be included in all future sealant placement programs.
- **Computer Aided Data Gathering** – As part of the dental sealant placement demonstration program, our team worked with our institution’s information technology office to develop and implement a computer base survey. The advantages of this approach include a more reproducible mechanism for data gathering, increase reliability, better data security and a more direct route from data gathering to data analyses. Overall, the use of this technology has been successful. However, recent improvements in hardware and software such as the introduction of small easy to use tablet computers able to upload data securely through broadband encourage further

development. It is the recommendation of this research team that as part of the upcoming state survey that the current computer based survey be adapted for these newly emerging technologies.

- **Financial model including sources of revenues, expenditures, investment in equipment costs and salaries** – A better understanding on how to maintain long term sustainability was one of the major goals of this research team. The funding required to establish and fully implement a statewide dental sealant program can be substantial. As a consequence, our research team proposes a multi tiered program as follows:

Sources of potential revenue include the DHMH Office of Oral Health, other offices and/or divisions of DHMH, Medicaid, Counties, Foundations, CDC, Private Insurance and Out of Pocket payments. Although it was beyond the scope of this demonstration project to secure additional funding for the continuation of the sealant program, it is the recommendation of this research team that this project be followed by an extended demonstration project to ascertain the feasibility of securing funds from any one of these other sources. To accomplish this, it is the recommendation of this research team that an extended demonstration project be included in the upcoming state survey. The principal purpose of this extension would be to make contact with and negotiate with other offices and/or divisions of DHMH, Medicaid and various Foundations for the purpose of collaboration and securing funds. In addition, this extension should serve as a vehicle for public health administrators to better understand the problems, factors and mechanics that should be considered if private dental insurance payments or out of pocket payments within a school based environment are to be included as a future funding source. The focus of this extension should be on the long term sustainability of funding.

Expenditures include administrative overhead, capital equipment, provider team salaries, dental supplies, dental materials, non dental supplies, non dental materials, translation services, printing, postage and travel. Administrative overhead primarily consists of the salaries of our research team. It is our expectation that a long term dental sealant program would not face the administrative salary burden of this research project. Instead, we anticipate that only one FTE administrative coordinator would be needed. Total capital equipment costs are approximately \$20,000 and include two lap top computers, two fully functioning portable dental units, three portable dental chairs, two portable curing lights, a digital scale, stadiometer (height measurement), and storage boxes. Capital expenditures are generally not recurring. Although some amount should be budgeted for repair and replacement the initial expenditure should be sufficient for the duration of the project. Each school visit consisted of a dental provider team including one dentist, one or two dental hygienists, one or two dental assistants and one administrative coordinator. The number of dental sealant providers (licensed

dentist or licensed dental hygienist) was determined by the size of the school and the response rate. In all schools only one dentist examiner was required since the bottle neck for the placement of sealants primarily occurs at the sealant placement station and not the examination station. It was our experience that a team with one sealant provider could successfully apply sealants to approximately fifteen children during one school day. Similarly, it was our experience that a team with two sealant providers could successfully and routinely apply sealants to approximately thirty (maximum of forty) children during one school day. Recurring expenditures are as follows and presented as a projected approximate of costs on a per school basis:

<u>Non Administrative Expenses</u>	Projected Cost Per School			
	One Sealant Team #		Two Sealant Teams #	
Dentist Provider	1	\$400	2	\$400
Dental Hygiene Provider	1	\$250	2	\$500
Assistant	1	\$150	2	\$300
Supplies		\$300		\$300
Equipment		\$800		\$800
Printing		\$100		\$100
Packets and Postage		\$227		\$227
Mover and Storage		\$263		\$263
Charter Bus		\$260		\$260
Travel		\$300		\$300
Approximate Total Per School		\$3,050		\$3,450

- **Appropriate schools to be targeted** – Our research team utilized a selection strategy and a qualifying strategy to select and target schools. Schools were first selected and then placed into three groups based upon a known sealant rate, response rate free meal rate and caries rate. Each group was then categorized into three levels: “Good”, “Bad”, and “Average”. The approach was effective in allowing us to select schools with a diversity of conditions. Our team had the advantage of knowing the rates at several schools since they had participated in the state survey just a few years ago. This turned out to be a very significant advantage. As a result, it is the recommendation of this research team that future school based sealant program be conducted in coordination with a school survey program if at all possible.
- **Locations which would obtain the greatest benefit from this project** – Our selection strategy was successfully applied and used. It is the recommendation of this research team that future school based sealant program be conducted in coordination with a school survey program if at all possible.
- **Logistics of coupling BMI calculation for schoolchildren with dental screening and provision of dental sealants** – Our efforts to integrate the collection of BMI screening data proved to be successful and without much burden. It is the

recommendation of this research team that efforts to collaborate with other offices at DHMH to achieve economies of scale and the sharing of resources should be encouraged as part of future school based sealant programs.

The following table models opportunities to secure additional funds or reduce the need for funds to conduct a successful statewide dental sealant program.

Dental Sealant Financial Model	
Total Funds Required	
Increase Source Of Funds	Decrease Need For Funds
<p>Coordinate With DHMH Office Of Oral Health To:</p> <p>Partner with other offices at DHMH to collaborate with and fund activities such as gathering BMI data.</p> <p>Negotiate with Medicaid to establish a payment mechanism for students in schools with a high rate of Medicaid coverage.</p>	<p>Risk Assessment Tool – Recognizing that the resources are limited in terms of time, funding and overall capacity, the systematic use of a Risk Assessment Tool based on available evidence is critical if a statewide sealant program is to provide care to children with the greatest need and least capacity to receive it. This strategy will also reduce the need for total funds and direct the available funds where they are needed most.</p>
<p>County Funding – Various counties currently support and fund local dental sealant placement programs. Coordination and collaboration would assist with the overall success rate of a statewide program</p>	<p>School Selection Strategy – Similar to the use of a risk assessment tool, the use of a School Selection Strategy will help to assure that sealant care is provided to children with the greatest need and least capacity to receive it otherwise. This strategy will also reduce the need for total funds and direct the available funds where they are needed most.</p>
<p>Foundation Funding – Foundations often support and fund local health program especially programs that will demonstrate new processes and procedures that will last and/or leverage other assets. Coordination and collaboration would assist with the overall success rate of a statewide program</p>	<p>Use of Alternative Providers – Dentist provider salaries constitute a significant component of total project costs. Consistent with current law and regulations, the appropriate use of Public Health Hygienists should be explored and considered.</p>
<p>CDC – The CDC is responsible in part for the funding and success of this program. Ongoing coordination and collaboration is desirable and would assist with the overall success rate of a statewide program</p>	<p>Alternative Sites – The use of alternative sites may provide a mechanism for achieving economic efficiencies in the administration and implementation of a state wide dental sealant program. The successful realization of economic efficiencies would lower the overall need for funds.</p>
<p>Private Insurance - Private Insurance in the form of direct fee for service payments, per-capita payments or as a block grant serves as an important alternative source of funding that should be explored and pursued.</p>	
<p>Out of Pocket - Out of Pocket payments constitute another important alternative source of funding that should be explored and pursued. A successful out reach campaign such as the Mighty Tooth campaign begun during this project could increase demand sufficiently to stimulate a willingness for parents to pay for sealant placement as part of school based programs.</p>	

Acknowledgements

The *State-based Dental Sealant Demonstration Project* started in 2009. We would like to take this opportunity to thank a number of key people who were involved with the study. They provided the technical expertise, data collection and administrative support that made the *Demonstration Project* so successful.

First, we want to thank the Office of Oral Health at the Maryland Department of Health and Mental Hygiene (DHMH) which provided the funding for the project. We wish to highlight the contributions of Dr. Harry Goodman, Director, Office of Oral Health and Mr. Keith Roberts, Chief Operating Officer, Office of Oral Health. They were always very responsive and provided guidance whenever necessary. Their direction and willingness to assist us was greatly appreciated.

A special thank you is extended to Dr. Nancy S. Grasmick, Maryland State Superintendent of Schools, for supporting the project. In addition, we wish to extend our appreciation to Ms. Donna Mazyck and Ms. Alicia Mezu, Health Services Specialists, Maryland State Department of Education. Ms. Mazu was instrumental in supporting our endeavors and promoting the project to nurse educators who work in statewide school systems.

We wish to thank to the Superintendents in the jurisdictions that participated in the project. Their support for the project enabled us to build a positive relationship with the administrators and staff at the local jurisdictions.

At the local county level, we would like to extend our appreciation to the school supervisors, principals, nurses, teachers, aides and staff of the schools that we visited. Without their support and assistance, the project would never have been possible.

The Maryland State Board of Dental Examiners was very cooperative. Their timely responses to our requests enabled us to obtain information that was necessary for the project.

Also, we would like to thank the members of the dental teams. We commend them for their enthusiasm and dedication. They were very professional and were skilled in adapting to the challenges of off-site dentistry.

Dr. Haiyan Chen, a member of the faculty of the Dental School, was responsible for the sample selection process, analysis and overall study design. Her contribution was critical to the success of the program.

We would like to thank Ms. Susan Coller, Project Coordinator, whose commitment and attention to detail in the planning and execution of the program was so valuable.

Special mention should go to Ms. Laura Kozak, Director of Marketing and Graphic Services, Office of External Affairs (OEA), University of Maryland, who assisted us in the design and delivery of the project and outreach materials, including the Mighty Tooth billboard, the permission packet that was sent to the parents/guardians and the large Mighty Tooth posters that were distributed throughout Maryland, and with the compilation of the final report materials.. Ms. Ginger Dunn, Administrative Coordinator, OEA, was responsible for coordinating the mailing efforts and handling numerous items that were shipped in a timely fashion.

Ms. Darlene Watkins and Ms. Carol Stillwell at the University of Maryland Dental School provided administrative support to the project and attended to many details associated with the execution of the grant.

The State-Based Oral Disease Prevention Program was partially funded by the Maryland Department of Health and Mental Hygiene, Office of Oral Health and partially funded by the Centers for Disease Control, State-Based Oral Disease Prevention Program Grant, CFDA 93.283.

Background and Purposes

According to the National Institutes of Health, dental caries is the most common chronic disease of childhood. It can lead to pain and have long-lasting effects on a child's development due to missed school, malnourishment and low self-esteem. Dental sealants have been shown to be an effective treatment for dental caries prevention.

Since the early 1970's, childhood dental caries in smooth tooth surfaces, has declined due to widespread exposure to fluorides. Most decay in children occurs in the pits and fissures of teeth. Placing sealants on these surfaces shortly after the tooth erupts can protect them from the development of caries in areas of the teeth where food and bacteria are retained. If sealants are applied routinely to susceptible tooth surfaces in conjunction with the appropriate use of fluoride, most tooth decay in children could be prevented.

As reported in the 2005-2006 *Survey of the Oral Health Status of Maryland School Children*, 31% of children who were screened had at least one tooth with dental caries. The study found that children who were eligible for free or reduced meals were more likely to have dental caries. During the 2008-2009 school year, about 160,000 elementary school children (40%) were enrolled in free or reduced-cost lunch programs in over 800 elementary schools in Maryland. These children were at the highest risk for dental caries, and they were least likely to have dental sealants.

Sealants remain a service that is underutilized in the state in spite of their benefits. Unfortunately, the children who are most at risk are least likely to have them. A comprehensive, statewide dental sealant program would greatly assist the children who need sealants the most.

The Office of Oral Health (OOH), Maryland Department of Health and Mental Hygiene (DHMH), received a grant award in 2009 from the Centers for Disease Control and Prevention (CDC) entitled *State-Based Oral Disease Prevention Program*. The grant built upon existing efforts of the OOH to establish, strengthen and enhance the infrastructure and capacity of the OOH to plan, implement and evaluate population-based oral disease prevention and promotion programs, prioritizing populations based on oral disease burden.

The grant stipulated that in the second year, the OOH would improve access to and utilization of existing school-based dental sealant programs by creating and implementing a demonstration project followed by the development of a statewide dental sealant program.

The OOH partnered in this effort with the University of Maryland Dental School, which had the expertise and experience in statewide dental assessment, surveillance and prevention activities. A Memorandum of Understanding between the OOH and the Dental School was entered into and commenced on May 1, 2009. The agreement terminated on July 30, 2010.

A demonstration project was developed. Specific schools were selected via a complex multi-stage probability sample design. A two-stage sampling design was used to select the project sample. The first stage involved the selection of 15 public elementary schools from five geographic regions throughout Maryland. The second stage involved the selection of all children in the 15 schools who were in the third grade.

Sealants were placed on the children's teeth according to criteria supported by current dental and medical literature related to caries-risk assessment and sealant placement (Preventing Dental Caries Through School-Based Sealant Programs: Updated Recommendations and Reviews of Evidence, Appendix 1). The project posed minimal risks to the participants – no more risk than that being in a dentist's office and having the procedure done.

The purposes of the demonstration project were to: (1) increase the proportion of Maryland children who received sealants in an effort to reduce the prevalence of caries; and (2) gather the information and data needed, including the administration of a survey questionnaire, to suggest a public health model that would utilize a sustainable and efficient method of care delivery for sealant placement as a preventive measure intervention for children at high risk for caries.

There were potential benefits to the children who were screened for oral health and those who had sealants placed on their teeth. Sealants provide a barrier and prevent tooth decay. Having a sealant placed on teeth before they decay will, also, save time and money by avoiding fillings, crowns or caps used to fix decayed teeth. Further, the information obtained will help the Office of Oral Health's future program development and policy.

In addition, at the request of the Office of Chronic Disease, Department of Health and Mental Hygiene, a Body Mass Index, (BMI), of children who were seen in the demonstration project was recorded. At the conclusion of the project, the BMI measurements were shared with the Office of Chronic Disease. No identifiers were utilized.

By the end of the funding period, the dental sealant demonstration project contributed to policies and programs supporting statewide oral disease prevention and community-based public health prevention services for prioritized populations based on disease burden. The goal was to reduce the prevalence of dental caries.

Personnel

Dr. Richard J. Manski served as the Project Director and was responsible for the overall management of the project. Dr. Manski is Professor and Director, Division of Health Services Research, Department of Health Promotion and Policy at the University of Maryland Dental School and a Senior Scholar at the Agency for Health Care Research and Quality.

Dr. Ronald R. Chenette served as the lead dental provider and was responsible for dental provider team recruitment, development of screening criteria, providing for training and establishing policies and procedures for sealant placement to assure proper patient consent and assent. In addition, Dr. Chenette provided guidance for the purchase of supplies and materials needed for this project. He is the Director of Clinic Operations at the University of Maryland Dental School.

Ms. Marion Manski reported to Dr. Chenette and served as the lead dental hygiene provider. She was responsible for dental hygiene provider team recruitment and establishing processes for dental hygiene training. She contributed to the protocol development. Ms. Manski is an Assistant Professor and Director of Admissions for the Dental Hygiene program at the University of Maryland Dental School.

Dr. Haiyan Chen provided statistical and programming support in accordance with an analysis plan provided by the project team. Dr. Chen evaluated the 2005-2006 Maryland Oral Health Survey data to determine critical target areas for oral disease, including disparities among population groups to help establish priorities and appropriate evidence-based intervention strategies. Dr. Chen is a Research Assistant Professor, Division of Health Services Research, Department of Health Promotion and Policy at the University of Maryland Dental School.

Dr. Howard Strassler provided content expertise on the selection and use of dental sealant material. Dr. Strassler is Professor and Director of Operative Dentistry, Department of Endodontics, Prosthodontics and Operative Dentistry at the University of Maryland Dental School.

Ms. Susan Coller, Project Coordinator, provided coordination for the project. Her qualifications included over 20 years of experience in administering Federal and State grants. Among her responsibilities were: organizing project deliverables; monitoring grant financials; establishing dental teams and arranging for their training; handling compensation for eligible members of the team; planning, coordinating and tracking grant activities; arranging the site visits; ensuring the collection and proper coding of data; developing project materials; complying with OSHA, HIPPA, Maryland Department of Health and Mental Hygiene, University of Maryland Dental School guidelines; and arranging planning meetings with Dental School personnel.

METHODS

The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, consists of two parts, an oral screening (Part One) and a health survey (Part Two). Part One includes primary assessments including the presence or absence of teeth, permanent or primary tooth status, dental caries, existing restorations, and presence of dental sealants. Part One also includes the ordering and placement of sealants on permanent first molars where indicated and an overall assessment of anticipated and general oral health treatment needs. Part Two is a self administered questionnaire, completed by a parent or guardian, designed to collect demographic characteristics.

Sample Design

Candidate Schools

- Initially, we sampled 35 schools for the 2005-2006 State Oral Health Survey. For this study, fifteen schools were selected from the 35 schools that participated in the Oral Health Survey.

Selection Criteria

- Conceptually, the 15 selected schools were placed into three groups: Good, Bad and Average. For example, if a school had a moderate sealant rate and high response rate, it was a “Good” school in the sense that it was expected to have high chance of participating in the sealant program. A school with either a high sealant rate or a low response rate was a “Bad” school for the sealant program; and schools falling in between were “Average” schools.
- Scores 0, 1, and 2 were assigned, in order, as “Bad”, “Average” and “Good” schools.

Quantifying the criteria

- Four criteria chosen to score a school into Bad-Average-Good categories were sealant rate, response rate, free meal rate and caries rate.
- Based on distribution of each rate by the data on 3rd graders from the 35 schools that participated in the 05-06 survey, each rate was categorized into three levels: Low (whose rate was lower than 25%); Moderate (whose rate was between 25% and 75%); and High (whose rate was higher than 75%).
- Each rate then was assigned a “Good”, “Bad”, and “Average” score based on the table as follows:

Rate	Levels of a rate		
	Bad (0)	Average (1)	Good (2)
Sealant	High	Low	Moderate
Response	Low	Moderate	High
Free meal	Low	Moderate	High
Caries	Low	High	Moderate

- A summary score was created by adding up the four rates per school.
- The summary score then was categorized into three levels: 0-2 was Bad, 3-5 was Average, and 6-8 was Good.
- Based on the categorized summary score, the 35 schools were grouped into 4 “Bad” schools, 13 “Good” schools, and 17 “Average” schools. Note: one school was not scored due to the fact that it had no third grade. Three “bad” schools were selected randomly from the 4 “bad” schools pool; 3 “good” and 9 “average” schools were selected into the initial 15 schools listed for the sealant program.

Modifications to the initial 15 Selected Schools

- We then eliminated one school from Baltimore City, one from Cecil County and one from Wicomico County, respectively based on their summary score from the 15 selected schools.
- Nine schools in Montgomery County were chosen for the 05-06 Survey, but the County did not participate. One of these nine schools was chosen for the Dental Sealant program.
- Similarly, five schools were chosen in Baltimore County for the last Survey project, however, the County did not participate. One of the five schools was chosen for the current sealant project.
- Carroll County, which was not included in the 05-06 Survey, was selected this time. One school was chosen.

The final selected 15 schools:

School Name	Region	County	Title	Score
Appeal Elementary	Southern	Calvert	NOT	Good
Greensboro Elementary	Eastern Shore	Caroline	1	Good
Gwynn's Falls Elementary	Central Baltimore	Baltimore City	1	Good
Deer Park Elementary	Central Baltimore	Baltimore County	NOT	----
Runnymede Elementary	Central Baltimore	Carroll County	Targeted	----
Buckingham Elementary	Eastern Shore	Worcester	1	Average
Forest Lakes Elementary	Central Baltimore	Harford	NOT	Average
Cecil Manor Elementary	Eastern Shore	Cecil	NOT	Average
Grantsville Elementary	Western	Garrett	1	Average
Rosemont Elementary	Central D.C.	Montgomery	1	----
Pemberton Elementary	Eastern Shore	Wicomico	1	Average
Riverdale Elementary	Central D.C.	Prince George's	1	Average
Bushy Park Elementary	Central D.C.	Howard	NOT	Bad
Crofton Elementary	Central Baltimore	Anne Arundel	NOT	Bad
North Frederick Elementary	Western	Frederick	NOT	Bad

Sample Weights

We applied sample weights to the participants of the Sealant Project so that the weighted estimates approximate statewide Maryland public school children in grade 3. Sample weights accounted for multiple factors, including: 1) number of schools in each municipality; 2) number of children in each school; 3) number of children in the State; 4) response rates in each school; 5) response rates in each region; and 6) other administration factors that affect the probability of a school participating in the Sealant Project.

Protocol

Originally, the sealant demonstration program targeted third grade children at 15 statewide elementary schools in Maryland. The schools, selected via a complex, multi-stage probability sample design, were located in the following counties - Anne Arundel, Baltimore, Calvert, Caroline, Carroll, Cecil, Frederick, Garrett, Harford, Howard, Montgomery, Prince George's, Wicomico, Worcester and Baltimore City. Subsequently, the number of site visits was reduced to 10; reasons for the reduction will be discussed later in the report. The school visits took place between February and May, 2010.

Planning Meetings

The Dental Sealant Demonstration Project Committee held a number of planning meetings prior to carrying out the activities of the grant. The Committee was composed of Drs. Manski and Chenette and Ms. Manski and Ms. Coller. Generally, these meetings were held every two weeks at the start of the project. Lasting about two hours each, discussions included designing the permission packets that would be taken home to the parents/guardians, developing forms inside the packet, researching the best equipment to purchase for the project, selecting a portable dental unit, purchasing dental sealant curing lights, reviewing other materials that would be needed, etc.

Additional decisions were made on items such as the composition of the dental teams and marketing strategies. Materials and equipment were selected and ordered (e.g. two portable dental units, dental sealant curing lights, head lamps, etc. and other project necessities).

Recognizing the importance of cooperation from the Maryland State Department of Education, the Project Coordinator, contacted Ms. Donna Mazyck and Ms. Alicia Mezu, School Health Specialists at the Department of Education and briefed them on the project. Ms. Mazyck, our primary contact at the Department of Education, said that she would do everything possible to assist us in obtaining the support of state officials.

Contacting the Local Superintendents

Ms. Mazyck advised us to send the superintendents a cover letter (Superintendent Letter, Appendix 2) describing the project and attach a fact sheet that described sealants (Fact Sheet, Appendix 3). Ms. Mazyck and Ms. Mezu offered to handle any internal communications with the State Superintendent's office regarding the project. Fortunately, Ms. Mazyck was meeting shortly with the nurse supervisors in each county at a meeting hosted by the Department of Education. She offered to include the sealant program on her agenda. We provided her with briefing materials.

Using information from the web site of the State Department of Education, the Project Administrator obtained mailing information for the Superintendents of the 15 targeted schools. A letter of introduction about the project was sent to each of the superintendents on September 25, 2009. The purpose of the letter was to introduce the

study and request permission to schedule on-site visits to screen third graders and apply sealants where indicated. Included was the fact sheet about sealants and their benefits. In addition, the letter stressed that no child would be screened whose parent/guardian did not give permission. Another key point was the assurance that there would be minimal interruption to classroom activities and that everything possible would be done to reduce time away from studies. Finally, the letter mentioned that the Project Coordinator would be calling shortly to explain the project in greater detail.

Very few superintendents responded promptly to the letter. Initial contacts began approximately ten days after the letters were received. The Coordinator followed up the letter with a telephone call. The purpose of the call was to ensure that the superintendent had received the letter and would lend his/her support to the project. This proved to be a lengthy process. Some superintendents took weeks to decide to participate.

In general, identifying the contact person was very time consuming. A number of offices had misplaced the letter and fact sheet. These delays were quickly resolved by mailing, e-mailing or faxing additional copies. In other instances, the contact person was on vacation, traveling to schools in the jurisdiction or was in a meeting. Eventually, everyone was contacted.

The selection of the contact person varied in different jurisdictions. Generally, the superintendent passed along our letter to an official in the local county to handle. As noted above, in many cases, the school nurse supervisor was designated as the primary contact. The supervisor contacted the school principal, arranged the dates and handled all of the arrangements. In some schools, the principal was the direct contact, while in others, the school nurse was the key person. The latter two options were preferred, because they were simpler, more direct and resulted in faster responses.

The Project Coordinator found that some administrators were very willing to permit the demonstration project to come to their schools while others were less receptive. Unfortunately, there appeared to be a number of worthwhile projects competing for time at the schools. One school official said that there were seven different organizations that had applied for on-site visits in the first five months of 2010.

Once the schools were selected and agreed to participate, all children from the third grade were included as part of the second stage of the sampling design. Sample weights to the participants were applied. In this way, the sample size would approximate all Maryland public school children in the third grade.

In some cases, getting dates at the designated schools was not a simple matter, even when the school officials agreed in principal to permit on-site screening and sealant placement. Most of the counties that agreed to participate were experiencing absences due to the H1N1 virus. In some cases, large numbers of children were absent. Blackout dates due to school holidays, statewide testing, teacher conference days, etc. were numerous.

Participation of the Schools

As noted above, the arrival of the H1N1 flu virus held the project up for several months. There were a number of severe outbreaks throughout Maryland. In some counties, absentee rates attributed to the flu precluded any discussion about selecting dates. School officials were concerned that there might be two waves of the virus – one in the Fall, 2009, and the other six months later in the Spring of 2010. In virtually every county that we contacted to select dates, we were asked us to wait until more was known about how the virus would affect the children and their absentee rate. There was so much that was unknown about the timing and scope of the disease. The disease was unforeseen when the grant was written or when it was awarded. Not only did it cause significant delays, but we found that there was uncertainty on the part of all the participants about when the project could resume.

Of the 15 superintendents who were contacted, 14 agreed to participate. The first school that opted out of the study was Bushy Park, in Howard County. They declined to participate since their school system had entered into a contract with a medical/dental provider in Maryland. Howard County school officials did not want to jeopardize the relationship, since the company had provided dental care, including sealants, to a number of schools throughout the area.

In March, 2010, four additional schools had to be eliminated from the study. Due to delays caused by the H1N1 virus, bad weather, and the virtual elimination of March (due to Spring breaks, statewide testing, etc), we could not schedule mutually acceptable dates in Cecil, Garret and Wicomico County. We tried repeatedly to schedule a date in Prince George's county but were unsuccessful. As a result of these unexpected situations, a total of 10 schools participated in the project instead of the original 15 schools.

Recruiting the Dental Teams

The dentists were recruited by Dr. Chenette. The primary consideration for the recruitment of dentists for participation with this project was that they be licensed to practice dentistry in the State of Maryland. Program information, that had been made available to the elementary schools, patients and their parents/guardians, noted that the children would be screened by a licensed dentist. The use of dental or dental hygiene students to perform screenings and place sealants (under faculty supervision) was decided against due to the inefficiencies that would be introduced into patient flow and the possible hesitation by parents/guardians to allow their children to participate.

When deciding upon where and how to recruit dentists for this project, the concern emerged that the dentist and dental team members would have adequate professional liability insurance coverage while screening and treating the children. This need, along with the obvious advantage of having large numbers of dentists employed by the Dental School, many of whom would potentially be interested and available to work with the project, made our decision to recruit only dentists employed by the Dental School an

easy choice. All students, residents, employees, and faculty of the Dental School participating in approved clinical activity are covered by the school's professional liability policy. Despite the many advantages of limiting recruitment to the Dental School, there were some unexpected challenges.

Two dentists were recruited and expressed immediate interest in participating with the project. Expectations were that these two individuals, along with the lead dentist, would be able to manage the screenings at all sites, or possibly be supplemented by the addition of another dentist later in the project. Unexpectedly, after discussing some of the logistics of the project, both dentists decided that they would not participate. Both expressed concern about the daily rate of pay offered to them for participation; one dentist further expressed concerns about other professional commitments that she had that might interfere with the project. This event did prompt discussion about whether the level of compensation offered to dentists, and to the other dental team members, was appropriate and adequate.

Due to the rather late notification by these two dentists, the principle investigator (PI) assisted the lead dentist with recruitment efforts. The principle investigator was successful in recruiting another faculty member who could commit to participating on three dates. The PI then sought and obtained permission from the pediatric dental residency program director to recruit pediatric dental residents who are also licensed to practice in Maryland. Not only was permission given, but the program director encouraged the residents to participate. Participation with the project proved to be a valuable experience for the dental residents and invaluable to the project as each resident proved to be skillful and enthusiastic. The lead dentist was also successful in recruiting two additional faculty members to the project, one of whom participated on two dates and the other on a single occasion.

Ms. Manski recruited dental hygienists and assistants from the Dental School at the University of Maryland to participate in the site visits. It was decided to allow licensed registered dental hygienists such as faculty, graduate students and degree-completion students to place the sealants and utilize the dental hygiene students as assistants.

Ms. Manski realized that getting people to participate in the project might be a significant challenge due to time constraints and scheduling conflicts. Prior to confirmation of the school dates, she contacted dental hygiene faculty and students from the Dental School to get an idea of how many people might be interested in volunteering. She explained the project to those who responded and filed their names in the event they were needed. When the school dates were finalized, she met with the faculty and students who had responded and began to establish teams.

To the best of her ability, Ms Manski tried to put together hygiene faculty and students in groups that were cohesive and lived or worked near the same jurisdictions as the schools that were going to be visited. Whenever possible, she tried to establish teams that would stay together as they visited different sites. It was felt that people who had

worked as a team would work better and more efficiently than new teams who had never been together on a school site visit.

Challenges to this recruiting effort included keeping the teams together whenever possible. There were several factors that impacted upon this undertaking, most of it beyond our control. At times, classes, exams, weather problems and other events affected the availability of faculty and dental providers, such as students and dental assistants. Although two recruits dropped out early in the project, overall, the recruiting process was very smooth.

Training the Dental Teams

Training at the Dental School was initiated prior to each site visit. This was an important part of the project, and several unique approaches were utilized. Conducting the training sessions during the noon lunch hour (when most people could attend), the lead dental examiner provided training guidance and oversight to ensure accurate examinations under various conditions at the schools. Dental team members included all dentists (including pediatric, dental residents, dental hygienists, dental hygiene students participating as dental assistants and general support staff and the Project Coordinator.

Conditions that might occur were simulated. “What-if” scenarios and appropriate responses were discussed. The goal was to prevent, as much as possible, mistakes or omissions. The teams practiced planning for successful visits and preparing for the unexpected.

Prior to the off-site visits, the teams practiced using the recently purchased portable dental equipment, reviewed risk assessment criteria (to be detailed later in the report) for sealant placement and discussed the parameters of dental conditions that might be seen during the school visits. The purposes of these practice session were to be certain that the equipment worked correctly and the dental teams were comfortable using new and unfamiliar equipment.

All dentists attended the training sessions, but not all dental team members were able to attend the sessions. To assist members of dental teams who worked too far from the Dental School to attend the training sessions, phone conferences were set up. These participants were emailed the materials and handouts prior to the meetings so that they could follow along.

It was decided that either the lead dentist or principle investigator would be present during a dentist’s first visit to a school site. This ensured that the dentist was able to coordinate the activity of the dental team and, also, was able to seek immediate clarification should questions arise. After the initial sealant event, it was felt that the dentists did not need this level of support and oversight.

The logistics of the elementary school visit were reviewed, including expected arrival time, directions to the school, contact information of school officials and contact

information of other dental team members. On several occasions, these contact numbers, almost always cell phones, were useful. Weather related delays and traffic delays allowed team members to communicate with each other immediately.

Strict safety procedures were emphasized. In addition, there were mock reviews of the forms in the permission packet (Permission Packet, Appendix 4), as well as practice entering data on the computerized screening form in the laptop computer, completing the Report Card (Report Card, Appendix 5) and getting accurate BMI measurements. Dental team members discussed the proper use of each form. Emphasis was given to the absolute need to ensure that the parent/guardian consent had been given, via a signature, for the child to participate in the project. If a signature was not present, the child would not be screened or treated. In addition, it was expected that the child must assent to treatment at the time of screening or sealing of their teeth. Dentists and dental hygienist team members were advised to encourage participation but to allow a child not to participate if the child had objections (for whatever reason).

An additional tool to demonstrate the use of the equipment was a twenty minute instructional video that was produced for the project by the principal investigator and the lead dental hygienist. It provided an excellent overview of how to use the portable equipment, supplies and materials. To further the understanding of what would take place, a demonstration of a sealant placement was also included. The video featured four different sections that could be watched entirely or limited to a single chapter. The segments included: Portable Dental Unit Set-Up; Portable Dental Chair Set-Up; Sealant Placement Demonstration; and Height and Weight Equipment Set-Up (for BMI measurements).

Members of the dental teams were encouraged to view the video prior to going to their assigned schools until they became familiar with the operation of the various items. The video was available online and on a laptop that was taken to each school.

During the training sessions, the Project Coordinator provided MapQuest printouts with directions from the Dental School to the school sites. Originally, it was thought that the dental teams could set up a car pool to reduce the costs of driving; however, this did not prove to be efficient, as most of the members of the dental teams lived far from one another and had to travel independently.

Another item discussed was the importance of restocking the dental supplies and other materials. Since some visits were only two days apart, this was necessary in order to be prepared for the next visits. Prior to leaving a site, an inventory would have to be taken.

In an effort to facilitate communication between the team members, the Project Coordinator compiled a Contact List, composed of e-mail addresses and cell phone numbers, that was distributed to all of the providers. The information was especially valuable in the event that someone was unexpectedly unable to be at the site or unavoidably delayed on the way to a site visit. Actually, these scenarios did occur, and the list was a very valuable resource.

A popular resource developed for the teams was the Provider List. Each person who applied sealants was given a number, and the list was available at each site. This number was placed on the office copy of the Report Card that summarized what was done for each child. When we referred to the list, the provider who applied a sealant could be identified quickly.

Subsequently, a number of spreadsheets were developed to assist the Coordinator in keeping track of the schedules, teams and other information. These proved to be very helpful. They included Schools, Assignments, Faculty Assignments, Pediatric Residents, Undergraduate Dental Hygiene Student Assignments, Graduate RDH's, Dental Hygiene Student Assignments, Degree Completion RDH's, Student Community Hygienist Assignments and Providers.

A few days before each visit, the Project Coordinator expanded the logistics information in an email that was sent to each team member, such as what to do when arriving at the site, names of contact people in the school, important telephone numbers, the school schedule and number of children expected to be seen (E-mail Sent to Team, Appendix 6).

Equipment for the Project

Among the equipment brought to each school were a laptop computer, two portable dental units, two portable dental chairs, two dental curing lights, multiple head lamps, disposable dental mirrors, mouth masks, safety glasses, gauze, disinfectant, non-latex examination gloves, a digital weight scale and a stadiometer (height measurement device) etc.. Each of the two portable dental units had a high-speed evacuation and air/water syringe with a self contained water source. A more complete list of the supplies and materials is included in the Appendix. (Supplies and Materials List, Appendix 7)

Moving Company

Because the equipment for the on-site operatory was heavy and bulky, it was decided to use a moving company to transport the items from the Dental School to the elementary schools.

Using a moving service turned out to be an excellent idea for a number of reasons. It freed the dental team from transporting the heavy equipment themselves. Further, it would have been difficult to put all of the equipment in someone's car. At least one large SUV would have been needed each time to transport the equipment back and forth – from the University of Maryland dental school to the site and then back to the Dental School until the next visit.

As requested, the driver for the moving company arrived at each school prior to the arrival of the dental team. As it worked out, the same driver handled all of our deliveries and pickups. This was a bonus, because he was familiar with our routine. The pick-up

responsibility, he helped the team pack up when needed. Then, the equipment was loaded onto his truck and taken back to the company's warehouse for storage until the next visit when the items were delivered to the school site.

With regard to items that had to be replenished after a site visit, a small container was used by the team to transport items back and forth. The container was taken back to the dental school after the school visit to be restocked. Items that had to be replenished from time to time included examination gloves, sealant materials and face masks. As noted earlier, prior to leaving a site, the Coordinator called the team members together and reviewed the inventory with them to see which supplies they felt needed to be restocked either for the next visit or one that would take place soon. As a result, we never ran out of supplies during any of the site visits.

Dental Sealant Materials, Supplies and Processes

Attention should be paid to providing adequate lighting options early in the project. The forehead mounted light was useful, however, some providers would have liked more illumination. A lightweight stool should be included in the list of equipment since it rolls, is easy to maneuver, and can be adjusted. Overall, the evacuation system of the portable unit was satisfactory; the high speed-section could be adjusted to various levels to accommodate the requirements of the operator. An isolate-system should be investigated for future projects. It could improve visibility issues while helping to maintain a dry field. The bright blue color of the etchant and the pink color of the Clinpro sealant material were easy to see. While the paper dry angles were helpful, the ones containing a gel worked better and are recommended.

Materials Designed for the Project

Permission Packets

The packets that were sent home to the parents/guardians of the children were developed by members of the Dental Sealant Demonstration Project Committee. Then, they were sent to the Office of External Affairs (OEA), University of Maryland to be designed and printed. The packets were ready several weeks prior to each site visit. In fact, all of the project materials were developed ahead of schedule.

Once a school agreed to a date, OEA staff mailed the packets to the contact person at each school about a month before the scheduled visit (Letter to School, Appendix 8). School officials were asked to brief the teachers about the project and give the packets to the children to take home. Parents/guardians were asked to sign the necessary forms and encouraged to return the packet as soon as possible. Generally, the signed packet was returned to the contact person – nurse, principal, vice-principal or the designated person.

Prior to the site visit, the Project Coordinator called or emailed the contact person on a regular basis to see how many packets had been returned. Strategies for increasing the numbers were discussed when the number of returned packages was low. The outside of the packet had check-off boxes that indicated whether the parent/guardian gave permission for the screening/sealant placement. Since this information was on the outside of the packet, it did not have to be opened. The number provided a snapshot as to how many children might be seen and how many dental team providers were needed on a particular day.

The packets consisted of a letter explaining the project, informed consent form, health history form, questionnaire, fact sheet and a "Seal Away Tooth Decay" booklet

produced by the National Institute of Dental and Craniofacial Research (*Seal Away Tooth Decay* booklet, Appendix 9).

As noted earlier in the report, only children whose parents/guardians provided a signed consent form for participating and checked off their permission on the outside envelope were allowed to participate in the project. **Children who did not have a signed consent form for screening and sealant placement did not participate in the project.**

Fact Sheet

The Fact Sheet provided information on the background of the grant, how the project operated, an explanation of what dental sealants were, their importance, who should receive them and the fact that there was no cost for the screening or sealants that were provided through the project.

Distributed at the Department of Education meeting for nurse supervisors that was mentioned earlier, the Fact Sheet was included in the permission packet that the children took home to their parents/guardians.

Spanish Materials

Various local School Superintendents or their representatives requested materials in Spanish. Several of the officials said that they had a significant number of Spanish-speaking parents/guardians and third graders. In order to have the best response possible, all of the project materials were translated into Spanish and available for schools that requested them. (Spanish materials, Appendix 10)

The following schools received packets in Spanish:

- Greensboro Elementary School in Caroline County
- North Frederick Elementary School in Frederick County
- Rosemount Elementary School in Montgomery County

The Site Visits

The dental teams included Maryland licensed dentists, dental hygienists and dental hygiene students. The latter group served as assistants or as recorders. Arriving at the school, the teams typically met in the parking lot and entered together as a team. Many schools requested that team members sign a Visitor's Log. Usually, teams were welcomed by a designated contact person and were then shown to the location that had been selected. The school schedule for the day (start time, breaks, recess, lunch time and dismissal) was confirmed, and the day's schedule was planned accordingly.

Screening and sealants were stopped during the lunch/recess break (about an hour). This gave the team a chance to relax, eat lunch and make any adjustments that they found were needed. Because a number of the schools were not near restaurants, team

members were encouraged to bring lunch. Generally, the team ate together in the classroom.

Unpacking the equipment, materials and supplies took approximately one half hour. While the set-up took place, the Coordinator opened the packets that the children had returned to confirm that the consent forms had been signed correctly. The envelope was saved as it was part of the treatment record.

The medical history form, completed by the parent/guardian, was examined closely by the coordinator to ensure completeness and by the dentist to see and that no contraindications for screening/sealants existed. None of the project forms that were checked indicated that there were any significant problems that would eliminate a child from participating. No child who had permission to participate was excluded for medical reasons.

We were very fortunate that parent volunteers were assigned to the team in most schools. They brought the children back and forth one class at a time and provided a valuable service as they were familiar with the school and the classroom locations.

Screening Process

Generally, there were two teams – a triage team and a sealant team. However, if there were large numbers of children expected to be screened, additional team members were sent to a school and two sealant teams were put into operation.

The dental team was aware of the need to work as efficiently as possible to avoid classroom disruptions and minimize the length of time that the children were out of their homerooms. They made a concentrated effort to maintain the flow of children at all times.

The medical history form was reviewed by the dentist to determine if there were any contraindications to treatment or other medical or treatment issues. They were instructed to note allergies, asthma (with use of inhalers); medications; and any notes from parents describing unique medical conditions. It was anticipated that only rarely would the dental team be unable to proceed with screening and sealant placement.

The dental team measured the height and weight of each child before the pupil sat in the dental chair and recorded those findings on the dental Report Card. They were told to be discrete about obtaining height and weight measurements so that the information was not shared with classmates (to the extent possible).

The dentists were instructed to screen the children and verbally tell the findings to the dental assistant who documented the data in the computer. A hard copy screening form was available in the event of a computer malfunction (Screening Form, Appendix 11). Findings included the presence and absence of teeth, the primary or permanent status of the tooth, the presence of caries, restorative materials or sealants. The dentist, also,

determined which teeth should receive a sealant. The information was recorded on the office copy of the Report Card.

The general dental treatment needs of the children were determined by the dentists who indicated their recommendations on the Report Card. The top page of the tri-part form was sent home to the parent / guardian (via the child). The second page was given to the school nurse, and the third copy was retained by the dental team as part of the treatment record. Permanent molars that should be sealed were ordered by the dentist and indicated on the office copy of the Report Card, and the dental hygienist recorded sealant placement on this page.

The dentist and dental assistant assigned each child to a risk assessment category and indicated the category on the outside of the sealant package envelope. Children were sent back to their classroom to be called back for sealants later in the day according their placement in the risk assessment category.

Sealant Placement

The following instructions were provided to the dental team:

- The dental hygienist will place sealants as ordered by the dentist. After all screenings have been performed, the dentist will also place sealants following the same protocol as described.
- The child sits on the portable dental chair. Ask the child to wear re-usable safety glasses prior to beginning sealant procedure.
- Brush teeth to be sealed with a new, dry toothbrush. After use, the brush should be wiped with a paper towel, and the tooth brush should be returned to the open tooth brush package (if possible), placed in a small plastic bag and then given to child to take home. The bag, customized for the project, has a label with the school name on it and a place for the child's name and teacher for identification if the bag is misplaced.
- Cotton roll isolation was used to isolate teeth. Operator may seal teeth in any order or combination, but should be as efficient as possible, sealing multiple teeth (either arch or side of mouth).
- Etch teeth according to manufacturer's instructions. Ensure that tooth is not contaminated with saliva prior to etchant placement.
- Apply and light cure the sealant material according to manufacturer's instructions.
- Note which teeth had sealants placed on them on the third page of the dental report card (office copy). Providers should also place their provider number next to the

sealed teeth indication. In this way, it is possible to identify the operator in the future, should that need arise.

Management of Adverse Incidents

The dental teams were instructed on the management of adverse incidents. Instructions are as follows:

1. Every effort will be made to avoid adverse incidents; unfortunately, accidents do occasionally occur. In the event of an adverse incident, the program coordinator will inform the school nurse and/or principal of any problem. The incident should be documented on the Report Card to inform the parents of the incident, for our records, and the elementary school's record.
2. Two common adverse incidents during sealant placement include chemical burn(s) due to etchant placed on soft tissue or oral mucosa and patient eye injury due to foreign body or liquid/chemical splash into patient eye(s). Attention to proper operator and dental assisting technique will help minimize the possibility.
3. To prevent chemical burns, provide good isolation with cotton rolls. Keep field dry from saliva. Place a minimal (but adequate) amount of etchant. Keep high speed evacuation tip close to tooth when rinsing and drying.
4. To prevent eye injury, ensure that patients wear safety glasses. Maintain close proximity to patient and help ensure minimal head movement by patient. Avoid passing instruments and material directly over patient's eyes. Ensure that eye splash kit is available should the need arise. Alternatively, use a school eye wash station to flush a patient's eye. Two bottles of sterile eyewash solution were available for emergency use.

End of Day Responsibilities

The Project Coordinator gave the school nurse or designated contact person the second page of the dental report cards. All reports indicating an urgent need to see the dentist were placed on top of the stack and noted to the contact person. The dental team was responsible for disinfecting and packing the portable dental unit so it would be ready for use by next team.

All unused supplies back were packed back in the travel cases. To the extent possible, supplies were returned to the appropriate box (dental supplies, office supplies, miscellaneous). This made un-packing for next team more efficient.

Trash bags with medical waste were given to the school nurse for disposal. The team checked to be sure that the work area was neat and clean and that all supplies were gathered. The Coordinator determined, with advice from dental team members, which supplies to replenish for the next school visit.

Before we left a school, each contact person received a copy of the *Oral Health Resource Guide 2009* that was produced by the Office of Oral Health. The booklet highlights dental care services in Maryland, by jurisdiction, and the immediate surrounding regions. Only those programs or public facilities which provide discounted or special services were listed in the directory. We distributed copies of this resource directory in the hope that children who needed dental care would be able to find a provider in their area.

Special Situations

On rare occasions, some children needed extra support. There was one child who was autistic. Interestingly, his mother was our school volunteer for the day. She said that we could try to screen her child, but she did not think that we would be successful. With regard to applying sealants, she was positive that this would not be possible. As expected, the child was very apprehensive about the process and needed a significant amount of hand holding and extra care by the dental team while he was being screened. Then, this very dedicated team applied four sealants to his teeth!

Only two other children presented problems during the visits. One child gagged as he was screened and felt as if he would be sick; however, the dental team worked with him, calmed him down and completed their work. Another child was screened but was too nervous to have sealants placed in her mouth.

As noted previously, children who were brought into the operatory had to agree to be treated. Any child who refused to participate was encouraged to participate but was permitted to decline if he/she did not wish to participate. In the event this occurred, the Report Card indicated that the child was “unable to be examined today.”

Risk Assessment Criteria

One of the goals of the Sealant Demonstration Project was to place as many sealants as possible on the permanent first molars of third grade children in the schools selected to participate with the project. Recognizing that there are limited resources available, both in this project and in all public health projects, and the appropriateness of providing treatment relative to the risk of disease progression, risk assessment criteria were established for use during the project.

In every instance, the dental team was visiting each school for only one day. The possibility existed that more children would participate in the screening than could possibly receive sealants due to limited time available in the school day, the time necessary to place sealants, and the limited equipment and staff available.

A workflow scheme was developed in which the dentist would screen all children first and assign each child to a risk category based on two risk factors known for each child. The risk factor priority number was written on the child's information packet which allowed for easy sorting. Children would then be allowed to return to their classroom

until later in the day when they would be brought back to the sealant room based on risk factor prioritization and as the dental hygienist or dentist was ready for their next patient. This minimized the disruption to the child's school time and maximized efficiency for the dental team.

The primary risk factor considered for sealant is history of caries. We further prioritized the placement of sealants on children with untreated (active) caries versus only a history of caries by the presence of restorations. The presence of restorations indicated access to some dental care, at least at a point in time, while active lesions gave no indications about whether dental care was currently accessible.

The secondary risk factor considered was income level, indicated by participation in the reduced fee meal program at school, as answered on the survey /questionnaire by the child's parent or guardian.

Considering only these two risk factors resulted in priority levels as follows:

- 1) Children with active caries (with permanent molar(s) suitable for sealants).
- 2a) Children with no active caries but with a history of caries as indicated by the presence of restorations (or strongly suspected by dentist by virtue of missing teeth not otherwise explained), and who qualify for free or reduced-cost lunches at school (as indicated by parent on questionnaire).
- 2b) Children with no active caries but with a history of caries as indicated by the presence of restorations (or strongly suspected by dentist by virtue of missing teeth not otherwise explained).
- 3) Children with no history of caries but who qualify for free or reduced-cost lunches at school (as indicated by parent on questionnaire).
- 4) Children with no history of caries.

This risk assessment formula recognizes previous caries history as the greatest predictor of future caries and secondarily recognizes the risk related to low income status, as indicated by reduced fee meals.

The model is also consistent with recommendations made within the recent review article that was mentioned earlier in this report - *Preventing Caries Through School-Based Sealant Programs: Updated Recommendations and Reviews of Evidence* by Gooch et.al. The report can be found in Appendix 1.

Creative Approach

Nine of the ten school visits took place at the school sites. However, we decided to "think outside the box" and be creative in our arrangements with Gwynn's Falls Elementary School which is located in Baltimore City. We chartered a bus and brought the children who returned their signed permission packets to the National Museum of Dentistry in downtown Baltimore City. The children were screened and/or had sealants applied and then toured the facility. Following this, the children boarded the bus for the

return trip back to the school. This was a very special event for them. Not only did they have a chance to get their teeth screened/have sealants applied, but they got a chance to see the Dental Museum which would not have been possible without the assistance of the project. This venture took considerable time to plan and could not have been done without the enthusiastic support of Gwynn's Falls officials.

Body Mass Index (BMI)

BMI calculations were made during the school visits and were shared with the Office of Chronic Disease Prevention (OCDP), Maryland Department of Health and Mental Hygiene. Concerned about the rise of childhood obesity of children, the OCDP wanted to obtain BMI measurements from children in statewide public elementary schools. However, due to budget restraints, they lacked the resources to visit these schools themselves. As a result, they asked the OOH to partner with them in this endeavor and share the BMI raw scores.

Since the linkage between poor nutrition and tooth decay has been well documented in the literature, this would be an opportune time to undertake a Body Mass Index (BMI) on children involved in this project. BMI is a non-invasive screening tool designed to assess the risks of being overweight and underweight for children, adolescents and adults.

Included in the sealant consent form was permission to measure the child's height and weight. After securing parental permission, each child who was screened for sealants was also measured for height and weight. Also, their birth date was recorded. As noted earlier, a digital scale and stadiometer device had been purchased to take the measurements. The numbers for each child's height and weight, recorded by a trained team member, were noted on the Report Card that the children took home, along with the results of their screening/sealant placement.

We were sensitive to errors in taking measurements and made a conscious effort to eliminate these factors. As noted earlier, privacy regarding the recording of the numbers was observed within the parameters of the setting. In an effort to get the truest measurements possible, the children were measured and weighed without shoes. Good posture was stressed when recording height.

Outreach Efforts

Several unique efforts to publicize the program were developed by the Dental Sealant Project Committee. A Mighty Tooth billboard was designed and erected that publicized the sealant project (Billboard, Appendix 12). The space was available for about three months and was provided to us at no charge. Erected at Finksburg and Route 140 in Northwestern Maryland, the location was chosen because of the catchment area around the billboard. Route 140 is the main feeder route to Carroll County and is also contiguous to Baltimore, Frederick and Howard Counties.

The billboard, designed by the Office of External Affairs (OEA), University of Maryland, featured Mighty Tooth, a newly developed cartoon character for the project, who was depicted as fighting tooth decay. His message was “*Seal Away Tooth Decay.*” At the same time, a letter was developed by the Administrator and sent by OEA to dentists whose offices were located in and near the area of the billboard (Letter to Dentists, Appendix 13). The Maryland State Board of Medical Examiners supplied the names, addresses and zip codes of the dentists.

The letter highlighted the project, location and message of the billboard as well as the Mighty Tooth website. The dentists, their patients and others in the local community were encouraged to visit the website. In addition, the dentists were told that they would receive a short postcard survey in the next few months to help determine if the billboard result in an increase number of patients asking about or requesting sealants.

In an effort to evaluate the impact of the billboard, a post card was mailed to 325 dentists in February, 2010 about four months after the letter was sent (Postcard Sent to Dentists, Appendix 14). They were asked if: (1) they had seen the Mighty Tooth billboard; (2) their dental practice currently offered dental sealants; (3) their practice had experienced an increase in dental sealant appointments since the billboard was installed; and (3) they had accepted new dental sealant patients. A total of twenty four completed surveys were returned for a seven percent response rate.

The results of the twenty four returned postcard surveys indicated that seven dentists had seen the billboard while fifteen had not. Asked whether their practice offered dental sealants, twenty two did while one did not (an oral surgeon). A total of thirteen accepted new patients for sealants, while ten did not. Two offices experienced an increase in dental sealant appointments compared to ten that indicated they did not. A Mighty Tooth sealant poster was requested by fifteen of the twenty four respondents. A number of respondents asked for multiple posters. It should be noted that a few people chose not to respond to different questions, and that is why the numbers do not always add up to twenty-four.

An unforeseen situation occurred. Some dental offices returned the survey and requested a poster. However, they did not provide their name or office address. In an effort to correct this, a second letter was sent to the same dental offices to which the survey postcards had been sent. This letter referred to the survey and asked if the dentist wanted a poster. The offices were requested to call or email their names and addresses. As a result, there were an additional eight offices that responded and received posters. These responders simply requested posters and did not complete the survey.

Recognizing the importance of the Internet for information, a web site created publicity for the project as well as informing the public about sealants. The web site address (www.sealawaytoothdecay.com or www.mightytooth.com) was printed at the bottom of the billboard, correspondence sent to dental offices and on all posters. (Mighty Tooth Web Site, Appendix 15). The web site featured a cartoon character,

Mighty Tooth, and included information on dental sealants, their importance and who should get them. Also featured were links to three resource publications: (1) the National Institutes of Health, National Institute of Dental and Craniofacial Research's *Seal Out Tooth Decay* booklet in English and Spanish; (2) the 2009 *Maryland Oral Health Resource Guide* published by the Office of Oral Health; and (3) the Maryland State Dental Association's web site for information on finding a local, private dentist.

RESULTS

The following section describes the findings from the Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program.

Response Rate (Table 1): Urban municipalities have a higher response rate than rural municipalities in terms of percentages of returning the program package, participating in the oral screening exam, and having at least one tooth sealed.

Sample Characteristics (Table 2): Approximately 60% of the sample resided in an urban municipality. More girls were sampled than boys. Hispanics and non-Hispanic others were over-sampled while non-Hispanic Whites were under-sampled. Students eligible for free or reduced-price meals were over-sampled.

Caries Prevalence and Average of Numbers of Decayed Teeth per Student (Table 3a,b): Students residing in rural municipality, eligible for free/reduced meals, whose caregiver's education was less than college, and who were boys, had higher prevalence of caries than their counterparts. Students without dental insurance had the highest prevalence of caries; those with private dental insurance had the lowest prevalence of caries. Students with caries prevalence from high to low were non-Hispanic Whites, non-Hispanic Blacks, Hispanics and non-Hispanics.

Sealant Prevalence and Average of Numbers of Sealed Teeth per Student (Table 4a,b): Students residing in an urban municipality, not eligible for free/reduced meals, whose caregiver's education was less than college, and who were girls, had a higher prevalence of sealants than their counterparts. Students without dental insurance had the lowest prevalence of sealants; those with Medicaid coverage had the highest prevalence of sealants. Students with sealants prevalence from high to low were non-Hispanic Others, non-Hispanic Whites, non-Hispanic Blacks, and Hispanics.

Restoration Prevalence and Average of Numbers of Restored Teeth per Student (Table 5a,b): Students residing in an urban municipality, eligible for free/reduced meals, whose caregiver's education was less than college, and who were boys, had a higher prevalence of restoration than their counterparts. Students without dental insurance had the highest prevalence of restoration; those with private dental insurance had the lowest prevalence of restoration. Students with restoration prevalence from high to low were Hispanics, non-Hispanic Whites, non-Hispanic Others, and non-Hispanic Blacks (the last two sub-populations had approximately the same restoration prevalence).

Event –free Percentage (note: event here =caries, sealants, or restoration) (Table 6): Students residing in an urban municipality, not eligible for free/reduced meals, whose caregiver's education was college graduate or higher, and who were girls had a higher chance of being event-free than their counterparts. Students without dental insurance had the lowest chance of being event-free; those with private dental insurance had the highest chance of being event-free. Students with a chance of being event-free from high to low were Hispanics, non-Hispanic Blacks, non-Hispanic Others, and non-

Hispanic Whites. Note: the last two sub-populations had approximately the same chance of being event-free.

Table 1. Municipality, Region, Constituent Counties, School and Number of Students

Municipality	Region	Constituent counties	Number of Schools.	Total Students	Pack-Returned Students (%)	Screened Students (%)	Sealed Students (%)
Urban	Central D.C.	Montgomery Anne Arundel Baltimore City Baltimore County Carroll Harford	6	478	253 (53)	131 (27)	76 (16)
Rural	Western Southern Eastern Shore	Frederick Calvert Caroline Worcester	4	453	147 (32)	89 (20)	59 (13)
Total			10	931	400 (43)	220 (24)	135 (15)

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

Note: % = # students returned package (or screened, or having teeth sealed) /total 3rd graders in a municipality.

Table 2: Sample characteristics including sample size, percentage, weighted population, and weighted percentage, Maryland, 2009-2010 (n=220)

Characteristic	Sample size	Percent age	Weighted population	Weighted % (SE)
Overall	220	100.0	60,859	100.0 (---)
Municipality				
Urban (region II, IV)	131	59.6	53008	87.1 (---)
Rural (region I,III, V)	89	40.4	7851	12.9 (---)
Gender				
Boys	95	43.2	26,473	43.5 (5.8)
Girls	125	56.8	34,386	56.5 (5.8)
Race/ethnicity				
Non-Hispanic white	107	48.6	10,880	17.9 (11.0)*
Non-Hispanic black	58	26.4	25,113	41.3 (16.5)*
Non-Hispanic other	18	8.2	4,139	6.8 (2.2)
Hispanic	28	12.7	13,998	9.9 (5.4)*
Unknown	9	4.1	6,729	11.0 (6.6)*
Free/reduced meal				
Eligible	87	39.6	32,032	52.6 (7.7)
Ineligible	121	55.0	20,320	33.4 (11.8)*
Unknown	12	5.4	8,507	14.0 (5.4)*
Caregiver's education				
Less than college graduate	113	51.4	34,535	56.8 (6.1)
College Graduate	93	42.3	19,550	32.1 (9.6)
Unknown	14	6.3	6,774	11.1 (6.6)*

Table 2: Sample characteristics including sample size, percentage, weighted population, and weighted percentage, Maryland, 2009-2010 (n=220)

Characteristic	Sample size	Percent age	Weighted population	Weighted % (SE)
Overall	220	100.0	60,859	100.0 (---)
Dental coverage				
Medicaid	79	35.9	24,849	40.8(8.2)
Private	115	52.3	27,021	44.4(6.9)
No Coverage	23	10.4	6,865	11.3(3.0)
Unknown	3	1.4	2,123	3.5(2.3)*

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

SE = standard error of weighted percentage.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Table 3a: Unweighted prevalence and mean of dental caries among school children in 3rd-grade, by selected characteristics: Maryland, 2009-2010 (n=220)

Characteristic	Prevalence % (SE) ¹	Mean (SE) ²
Overall	31.4(2.2)	2.3(0.2)
Municipality		
Urban (region II, IV)	24.4(2.1)	2.3(0.4)
Rural (region I,III, V)	41.6(6.8)	2.4(0.3)
Gender		
Boys	33.7(3.8)	2.3(0.4)
Girls	29.6(3.5)	2.4(0.2)
Race/ethnicity		
Non-Hispanic white	33.6(5.2)	1.9(0.2)
Non-Hispanic black	32.8(5.9)*	3.3(0.3)
Non-Hispanic other	22.2(8.7)*	3.0(0.4)
Hispanic	25.0(5.8)	1.6(0.3)
Free/reduced meal		
Eligible	36.8(6.1)	2.4(0.2)
Ineligible	25.6(4.2)	2.3(0.3)
Caregiver's education		
Less than college graduate	32.7(3.3)	2.5(0.3)
College Graduate	26.9(5.7)	2.1(0.3)
Insurance coverage		
Medicaid	31.6(5.5)	2.6(0.2)
Private	26.1(3.7)*	2.0(0.3)
No Coverage	52.2(13.7)	2.7(0.5)

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

NOTE: 1. Prevalence is defined as occurrence of any caries among all selected population.

2. Mean is the average number of teeth with caries among students with caries in selected population.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Table 3b: Weighted prevalence and mean of dental caries among school children in 3rd-grade, by selected characteristics: Maryland, 2009-2010 (n=220)

Characteristic	Prevalence % (SE) ¹	Mean (SE) ²
Overall	24.8(4.4)	2.0(0.2)
Municipality		
Urban (region II, IV)	22.0(5.4)	2.1(0.3)
Rural (region I,III, V)	43.6(6.5)	2.0(0.3)
Gender		
Boys	28.7(5.0)	2.3(0.4)
Girls	21.8(7.2)	1.8(0.2)
Race/ethnicity		
Non-Hispanic white	37.7(4.8)	1.7(0.1)
Non-Hispanic black	17.2(7.5)*	3.4(0.5)
Non-Hispanic other	29.3(13.4)*	2.3(0.3)
Hispanic	16.8(1.0)	1.1(0.1)
Free/reduced meal		
Eligible	19.2(6.8)*	2.6(0.3)
Ineligible	23.0(4.6)	2.0(0.2)
Caregiver's education		
Less than college graduate	19.4(4.5)	2.2(0.7)
College Graduate	25.4(3.2)	2.3(0.7)
Insurance coverage		
Medicaid	14.0(5.1)	2.1(0.5)
Private	15.5(7.2)*	1.6(0.3)
No Coverage	78.2(17.1)	2.5(0.5)

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

NOTE: 1. Prevalence is defined as occurrence of any caries among all selected population.

2. Mean is the average number of teeth with caries among students with caries in selected population.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Table 4a: Unweighted prevalence and mean of dental sealants among school children in 3rd-grade, by selected characteristics: Maryland, 2009-2010 (n=220)

Characteristic	Prevalence % (SE) ¹	Mean (SE) ²
Overall	35.9(4.5)	2.8(0.3)
Municipality		
Urban (region II, IV)	38.9(5.5)	2.7(0.4)
Rural (region I,III, V)	31.5(7.0)*	3.0(0.2)
Gender		
Boys	29.5(6.0)	2.7(0.3)
Girls	40.8(4.9)	2.9(0.3)
Race/ethnicity		
Non-Hispanic white	42.1(6.2)	2.9(0.4)
Non-Hispanic black	29.3(5.4)	2.8(0.5)
Non-Hispanic other	44.4(13.6)	2.5(0.3)
Hispanic	21.4(5.1)	3.0(0.4)
Free/reduced meal		
Eligible	33.3(4.2)	2.9(0.3)
Ineligible	37.2(5.7)	2.9(0.3)
Caregiver's education		
Less than college graduate	37.2(6.3)*	3.0(0.3)
College Graduate	35.5(6.7)	2.8(0.3)
Insurance coverage		
Medicaid	40.5(5.5)	2.8(0.3)
Private	36.5(5.5)	2.9(0.3)
No Coverage	17.4(7.4)*	2.8(0.6)

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

NOTE:

1. Prevalence is defined as occurrence of any sealant among all selected population.

2. Mean is the average number of teeth with sealant among students with sealant in selected population.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Table 4b: Weighted prevalence and mean of dental sealants among school children in 3rd-grade, by selected characteristics: Maryland, 2009-2010 (n=220)

Characteristic	Prevalence % (SE) ¹	Mean (SE) ²
Overall	42.0(9.9)	2.4(0.2)
Municipality		
Urban (region II, IV)	40.9(10.7)	2.3(0.2)
Rural (region I,III, V)	49.5(19.9)*	3.1(0.2)
Gender		
Boys	33.7(8.5)	2.6(0.2)
Girls	48.5(10.0)	2.3(0.2)
Race/ethnicity		
Non-Hispanic white	54.4(9.8)	2.9(0.3)
Non-Hispanic black	49.1(14.9)	2.2(0.2)
Non-Hispanic other	54.6(11.4)	1.8(0.5)
Hispanic	18.7(2.8)	3.5(0.1)
Free/reduced meal		
Eligible	41.6(11.8)	2.2(0.3)
Ineligible	39.6(9.1)	2.9(0.3)
Caregiver's education		
Less than college graduate	38.8(15.6)*	3.1(0.2)
College Graduate	45.7(10.6)	2.3(0.3)
Insurance coverage		
Medicaid	55.1(8.8)	2.3(0.2)
Private	38.5(10.6)	2.6(0.3)
No Coverage	6.5(6.2)*	3.3(0.6)

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

NOTE:

1. Prevalence is defined as occurrence of any sealant among all selected population.

2. Mean is the average number of teeth with sealant among students with sealant in selected population.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Table 5a: Unweighted prevalence and mean of dental restorations among school children in 3rd-grade, by selected characteristics: Maryland, 2009-2010 (n=220)

Characteristic	Prevalence % (SE) ¹	Mean (SE) ²
Overall	33.2(4.7)	3.1(0.6)
Municipality		
Urban (region II, IV)	35.1(7.2)	3.5(0.7)
Rural (region I,III, V)	30.3(5.3)	2.4(0.5)
Gender		
Boys	38.9(5.1)	3.2(0.7)
Girls	28.8(6.1)	3.0(0.5)
Race/ethnicity		
Non-Hispanic white	32.7(3.8)	2.4(0.2)
Non-Hispanic black	27.6(6.8)	3.3(0.9)
Non-Hispanic other	27.8(8.3)	4.4(1.6)
Hispanic	42.9(8.8)	3.2(0.7)
Free/reduced meal		
Eligible	39.1(5.0)	3.2(0.7)
Ineligible	27.3(3.7)	2.8(0.5)
Caregiver's education		
Less than college graduate	38.9(5.7)	3.1(0.6)
College Graduate	23.7(4.6)	2.6(0.4)
Insurance coverage		
Medicaid	36.7(3.7)	2.8(0.5)
Private	28.7(5.8)	3.6(0.8)
No Coverage	39.1(11.6)	2.6(0.6)

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

NOTE:

1. Prevalence is defined as an occurrence of y sealant among all selected population.

2. Mean is the average number of teeth with sealants among students with sealant in selected population.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Table 5b: Weighted prevalence and mean of dental restorations among school children in 3rd-grade, by selected characteristics: Maryland, 2009-2010 (n=220)

Characteristic	Prevalence % (SE) ¹	Mean (SE) ²
Overall	43.1(9.0)	4.3(0.7)
Municipality		
Urban (region II, IV)	45.2(9.5)	4.5(0.6)
Rural (region I,III, V)	28.4(6.9)	2.3(0.7)
Gender		
Boys	45.0(10.9)	5.0(0.8)
Girls	41.6(8.2)	3.8(0.5)
Race/ethnicity		
Non-Hispanic white	34.4(6.2)	2.1(0.3)
Non-Hispanic black	36.6(8.7)	4.5(1.1)
Non-Hispanic other	35.8(9.2)	8.0(0.8)
Hispanic	53.8(4.8)	3.8(0.1)
Free/reduced meal		
Eligible	46.3(6.0)	4.5(0.8)
Ineligible	29.8(6.4)	3.6(0.6)
Caregiver's education		
Less than college graduate	45.4(6.1)	4.3(0.8)
College Graduate	26.5(8.1)	2.6(0.5)
Insurance coverage		
Medicaid	39.9(5.9)	3.8(0.7)
Private	42.8(16.6)*	5.3(0.8)
No Coverage	52.8(17.7)*	2.8(0.3)

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

NOTE:

1. Prevalence is defined as occurrence of any sealant among all selected populations.

2. Mean is the average number of teeth with sealants [-among students with sealants in the selected population.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Table 6a: Unweighted prevalence of children with no caries, sealant or restorations in school children in 3rd-grade, by selected characteristics: Maryland, 2009-2010 (n=220)

Characteristic	Prevalence % (SE) ¹
Overall	30.0(3.3)
Municipality	
Urban (region II, IV)	32.1(4.7)
Rural (region I,III, V)	27.0(5.0)
Gender	
Boys	28.4(2.8)
Girls	31.2(4.8)
Race/ethnicity	
Non-Hispanic white	27.1(2.2)
Non-Hispanic black	34.5(7.0)
Non-Hispanic other	27.8(15.1)*
Hispanic	35.7(5.9)
Free/reduced meal	
Eligible	26.4(3.8)
Ineligible	34.7(5.2)
Caregiver's education	
Less than college graduate	25.7(3.1)*
College Graduate	37.6(6.6)
Insurance coverage	
Medicaid	29.1(4.2)
Private	33.0(4.4)
No Coverage	21.7(10.7)*

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

NOTE:

1. Prevalence is defined as occurrence of any sealant among all selected population.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Table 6b: Weighted prevalence of children with no caries, sealant or restorations in school children in 3rd-grade, by selected characteristics: Maryland, 2009-2010 (n=220)

Characteristic	Prevalence % (SE) ¹
Overall	23.1(5.7)
Municipality	
Urban (region II, IV)	32.1(4.7)
Rural (region I,III, V)	27.0(5.0)
Gender	
Boys	28.4(2.8)
Girls	31.2(4.8)
Race/ethnicity	
Non-Hispanic white	27.1(2.2)
Non-Hispanic black	34.5(7.0)
Non-Hispanic other	27.8(15.1)*
Hispanic	35.7(5.9)
Free/reduced meal	
Eligible	26.4(3.8)
Ineligible	34.7(5.2)
Caregiver's education	
Less than college graduate	25.7(3.1)*
College Graduate	37.6(6.6)
Insurance coverage	
Medicaid	29.1(4.2)
Private	33.0(4.4)
No Coverage	21.7(10.7)*

SOURCE: The Dental Sealant Demonstration Project of the State-based Oral Disease Prevention Program, 2009-2010.

NOTE:

1. Prevalence is defined as an occurrence of any sealants among all selected population.

* Does not meet the standard for statistical reliability (i.e. The standard error was equal to or greater than 30 percent of the estimate).

Conclusion

Challenges to the Study

In addition to a number of successes in this project, there were several difficulties that we encountered throughout the Dental Sealant Project. Since this was a demonstration project, we knew that there would be unexpected situations that would arise. On a positive note, we felt these potential roadblocks would be helpful in undertaking future projects, and we considered them to be learning experiences. It was our belief that the challenges would broaden our knowledge and assist us in being better prepared in similar situations.

Contacting the Superintendents

The letter to the fifteen county Superintendents was sent on September 25, 2009. Responses were very slow or not forthcoming. The Project Coordinator made numerous phone calls to see if Superintendents who had not responded would agree to participate in the project. Unfortunately, she found that some offices had misplaced or lost the letter. When this happened, another copy was e-mailed, sent or faxed at once. In other cases, it took weeks for a decision to be made.

Another delay resulted when Superintendents delegated responsibility to school nurse supervisors in the local jurisdictions. At times, a number of supervisors did respond promptly, but some did not. They were often unavailable or difficult to reach due to travel commitments throughout their district, meetings, being tied up on the phone or other reasons. At times, we were delayed a week or more waiting for supervisors to return our frequent calls. After we spoke, they had to check with the school principal to obtain several tentative dates and call us back with these dates. Unfortunately, at times this process took weeks to resolve.

H1N1Virus

The arrival of the H1N1 flu virus held the project up for several months. There were a number of severe outbreaks throughout Maryland. People of all ages were affected, especially those with underlying conditions.

After we mailed our letter to the local county superintendents, we learned that current school absentee rates attributed to the flu made scheduling dates for site visits difficult. Information from the Centers for Disease Control suggested that there could be additional breakouts at different times of the year in various states. School officials were concerned that there would be two waves of the virus – one in Fall of 2009 and another six months later in Spring of 2010. Nearly every county we contacted to select dates asked us to wait several months until they knew more about how the virus would affect their schools. Many schools were experiencing significant absentee rates.

The Weather

In February, two massive snowstorms coming only days apart effectively crippled our state. For days, it was impossible to remove the snow and bring transportation back to normal. The Dental School and statewide elementary schools were closed for nearly two weeks and reopened only days before our first scheduled visit to Gwynns Falls Elementary School in Baltimore City on February 17, 2010. President's holiday took place two days prior to this first visit, and schools statewide again were closed.

We could not communicate with officials at Gwynns Falls to find out how many children were to be screened until the day before we were scheduled to come. At that time, Gwynns Falls asked us to cancel our visit. Another school, Appeal Elementary in Calvert County, scheduled for February 19th, asked us to delay the visit until later in the year. Both schools were just reopening and did not want their third graders to miss more class work because they had missed so many days of school.

With regard to the dental teams, the weather-related closing of the Dental School prevented our teams from going through a final rehearsal and packing up the supplies/materials needed for the visit. Ultimately, the dates were rescheduled; however, this was not a simple task due to the clinic schedules, class, rotation and other commitments of the dental teams.

The timing and scope of the N1N1 disease and the weather were unexpected and unforeseen when the grant proposal was written and when it was awarded in the Spring of 2009. Had these events not happened, we would have started our site visits in December, 2009. Instead we were not able to schedule our first visit until February 25, 2010. This delay would prove to be a significant problem as we moved ahead with the project.

Reduction in Number of Schools Visited

Originally, we were scheduled to visit fifteen schools, however, that number was reduced to 10 due to a number of factors beyond our control. As noted earlier, Howard County's contract with Chase Brexton was an issue. Due to the inclement weather, Cecil Manor in Cecil County had to be rescheduled. As we were making plans for the visit, it became apparent that the schedule for the students on that particular day did not permit enough time to screen/apply sealants. We could not find mutually acceptable dates for Grantsville Elementary in Garret County and Pemberton Elementary in Wicomico County. Despite repeated calls, we were unable to get a date confirmed for Riverdale Elementary School in Prince George's County.

Scheduling Dates

As noted previously, there were a number of delays that occurred both before and after a county agreed to participate. At times, it was difficult to select a date that was agreeable both to the school and the providers who made up the dental teams. Often

there was considerable delay on the part of school officials to confirm a date. This interfered with setting schedules and finalizing dates for the dental teams.

Also, blackout dates for school events such as vacations, holidays, teacher study dates, and standardized tests also contributed to the problem. For most schools, the month of March was virtually unavailable for on-site visits, due to the Maryland School Assessment (MSA) test. MSA is a test of reading and math achievement that meets the testing requirements of the federal No Child Left Behind Act. It is given each year in March in grades 3 through 8.

In general, school officials did not want to schedule our visits immediately prior to the tests, nor did they wish to have the dental teams come just after the tests were given. They felt there was enough disruption because of these tests without visits by the dental team. We estimated that we lost about six weeks of time scheduling dates due to: (1) the standardized tests in March; and (2) Spring vacations during the first two weeks in April.

During the last week of site visits in May, we booked the dental teams to visit three schools on a Monday, Wednesday and Friday. Although this did not appear to be a problem when we scheduled the dates, it soon became apparent that these arrangements were less desirable than anticipated. At least two days between visits would have been more reasonable – supplies had to be replenished, long travel days did not allow for a break, on-going office work had to be done, etc. We were fortunate that the equipment did not break down, as we would have had a serious problem getting a replacement part so quickly. However, on the next to last school visit, we discovered that we had a problem with one of the portable dental units, and, to a latter extent, the second unit, also.

Mobile Dentists

Since the last Oral Health Study was conducted in 2005-2006, there has been an increase in the number of dental providers who visit elementary schools to provide dental services. Sometimes known as mobile dentists, they now visit a number of schools throughout the state on a regular basis. Although we did not go to Pemberton Elementary in Wicomico County as planned, we were told that the school had a grant that enabled mobile dentists to come to the school every six months. Under a contract with the dentists, they saw uninsured children as well as children who were covered by Medicaid.

As noted earlier, Howard County, also, had a contract with a medical group to provide dental services. The group came to twelve elementary schools in the county to screen and apply sealants on children in Pre-K to 2nd grade last year. We were told that the local Health Department and the School System in Howard County evaluated our project and decided that this was not the right time for the program. The County may be expanding their partnership with the health care provider and wanted as little disruption as possible to the provision of their dental services.

Length of Project

Many of the delays highlighted above led us to believe that that the grant period of one year was not long enough to complete this project. In that time period, permission had to be requested from the Maryland Department of Education to implement the project, local superintendents had to be contacted for permission to visit the schools, nurse supervisors or other school officials had to approve a date for the site visit, dental teams had to be designated, the materials had to be designed, site visits had to be conducted and the final report had to be written. It is possible that all of these activities might have been done on schedule and within the allotted time if the H1N1 virus, weather and other factors did not occur. It was felt that a grant period of 18 months or more would have been more realistic.

The Packet

In conversations with the contact person at the scheduled school, the Coordinator frequently mentioned the importance of keeping the returned packets unopened and in a safe place until the day of the visit. However, there was an incident that occurred at one of the schools that underscored the importance of stressing these instructions to the contact person(s).

In one county, the school nurse had placed the returned packets on her desk. One afternoon she left her office to go home, and when she returned the next day, she found that several envelopes had been opened and the permission forms were clipped together. However, the outside envelope was missing. She was able to track down the person who opened the envelopes and found that it was a third grade teacher at the school who “just wanted to make things easier” for the nurse.

The nurse called the Project Coordinator and requested new envelopes to replace the ones that had been tossed - unfortunately, they had been collected on trash day at the school. We were not able to honor her request. The entire packet had to be returned by the children with the appropriate information completed on the outside of the envelope, so this group of children could not be screened.

Storage of Materials

One topic that was not given a lot of consideration before the project began was the storage of equipment, material and supplies used during the sealant project. The sealant supply list in Appendix 7 shows the many materials and supplies that were purchased, needed and available at every sealant session. The list is comprehensive, but does not highlight the many boxes that contained the bulk of the supplies which were not transported to the site. There was a need for adequate storage space for these supply boxes. To the extent possible, we relied upon “just-in-time” ordering to minimize the need for storage, but that only included a few items and, consequently, required monitoring. Also, supplies needed to be readily available because of the short time between school site visits. They had to be replenished.

Our supplies were primarily stored in the private offices of some dental team members. This situation was manageable due to the relatively short time frame of the project. Long-term storage of these supplies in the same offices would not have been feasible. Although only a few years old, the Dental School building has minimal storage facilities and only a few closets. There were no closets available for the sealant project.

Once the school visits started, the value of utilizing an equipment moving and storage company became even more apparent. Not only did we benefit from the transportation of these materials, we also did not need to have our own storage space for those items, since they were kept at the moving company's storage facility. On the day of screening, we only needed to transport enough replacement supplies to replenish the stock used during the last school visit. At each elementary school, the dental team had sufficient supplies available to be able to screen and seal the teeth of at least 100 children.

At the conclusion of this project, space was identified within the Dental School for storage of the remaining equipment and supplies.

Summary of Findings

As we concluded the project, we decided to list some of our observations and suggestions for future programs. They may be helpful for others who are undertaking similar projects.

1. **Composition of the Dental Teams** - This was very important. We looked for people who could be team players – no matter what their position or title. For example, everyone's help was needed in the portable dental office (e.g., unpacking the equipment, wiping off the chairs between patients, multitasking, changing responsibilities when needed). Since it took about a half hour to set up and the same amount of time to break down and pack everything away, it was important for everyone to lend a helping hand.
2. **Team Members** - It was desirable to have the same team members working together, if possible. In this way, techniques could be refined and everyone would have a good idea of what was expected. If this was not possible, it was helpful to have at least one member of the dental team who worked at another site to be teamed with the new members.
3. **Dental Teams** - Whenever possible, we tried to choose providers who lived in the same jurisdiction as the school or somewhere near the community. Because most of the schools began between 8:30 a.m. and 9:00 a.m., we started out early to get to the sites, and this was when traffic was the heaviest. It was not unusual for the drive to be two or three hours in length. After arrival at the school, we had to set up the equipment which took at least another half hour. By matching people up with the sites, we were able to reduce the drive time to many of the school locations.
4. **Contact List** - An up-to-date contact list proved to be very valuable. The Project Coordinator developed this list which included everyone's name, e-mail addresses and cell phone numbers. There were times when team members, using the list, called the Coordinator when they were delayed in reaching a site due to unexpected traffic. All of the team members had cell phones and email addresses, so it was not a problem to reach anyone, even on relatively short notice.
5. **Back-Up Members** - When selecting a team for each site, we always included at least one back-up or substitute person. This was important in the event someone called in sick at the last moment or could not come to a school. To illustrate this point, one night the Coordinator received a call from a team member. It was about 7:00 p.m. on the night before a site visit. The person did not feel well during the day and developed a fever in the evening. She apologized for cancelling so late. In this case, we knew that we would not have a large number of children to screen/apply sealants, so we did not have to contact a substitute. However, if the number of children had been large, we would have used the back-up person who was scheduled for the visit.

6. **Moving Company** - Using a moving company turned out to be an excellent idea. Not in our original plans, we soon realized that the equipment, materials and storage crates would be difficult to get into a car. We would have needed a few SUV's to transport everything efficiently. Plus, the weight of the items could have been a factor when lifting them out of the vehicle. If one of the vehicles had been delayed, it was possible that we would not have been able to start the screening or sealant activities until the driver arrived.
7. **Name Tags** - It may be a good idea to have name tags with titles for each member of the dental team to wear. Not everyone knew each other or what they did, and this would have made introductions easier. At each site, the dental team introduced themselves to the children, and name tags would have been an advantage.
8. **Video** - The Principal Investigator and Lead Dental Hygiene Provider created a video that illustrated how the equipment worked. Included in the video were instructions on setting up and taking down the equipment i.e., portable dental unit, chairs, measurement tools for the Body Mass Index (BMI), etc. Also, the actual screening/sealant process was demonstrated. Members of the team were encouraged to watch the video and become familiar with the instructions, especially prior to their assigned visit. The video was well organized and easy to follow.
9. **Supplies** - On site, prior to screening the first child, the dental team should check out the equipment and supplies to be certain that they have everything they will need. Because every room in each school was different, it was not unusual for supplies to be put in different places. This procedure would eliminate looking for items once the screening began. Also, in the rare event that something was missing, one could see if it could be brought to the site or borrowed from the school staff. In one case, we needed a screw driver but did not have one or a substitute tool that worked well. Fortunately, the school custodian had a screw driver and lent it to us. We recommend that a tool box filled with basic tools should be added to a list of supplies.
10. **Comments** - The dental team was cautioned to refrain from commenting upon the appearance of the children or their clothes. Innocent remarks such as "You have such pretty hair", "I like your tee shirt", "You are so tall" – should be avoided. The team was asked to be discrete about giving height and weight information (BMI measurements) to the recorder. We respected the privacy of the individuals.
11. **Directions** - For directions to schools, we suggested that the dental teams use MapQuest or Google Maps. Other sources were local radio and television stations which gave periodic weather/traffic updates. These were very helpful. Team members were encouraged to listen to these stations as they drove to the sites. To illustrate, one school opened two hours late in the morning due to fog. This was unexpected the night before. The Project Coordinator heard the news

on the radio at 6:00 a.m. and confirmed it on the school's web site. She called each member of the dental team (using the contact list) to alert them to the situation and told them to come to the school two hours later. If she had not called, the team members would have arrived at the school two hours early and found the school closed. Not only that, they may have been driving in unsafe conditions.

12. **Room at the School** - Prior to the site visit, close attention should be paid to the location that the contact person has selected for the site visit. Ideally, it should be large enough to set up the equipment, have several electrical outlets, be located on the first floor (a second floor location can present challenges for getting equipment and materials up the stairs) and have a sink, although this is not absolutely necessary. Along with the letter to the principal that confirmed the date of the visit, the Coordinator included a list of desired items, such as tables, chairs, trash cans, etc. If the room is not satisfactory, don't hesitate to negotiate for another location.
13. **Puzzles** - While the children were waiting to be seen, members of the dental team gave them several dental puzzles and crayons to play with. (Dental Puzzles, Appendix 16). They were given these puzzles to take home. In future projects, it would be a good idea to ask school officials to have the third graders bring library books. The books would help keep the children occupied while they are waiting to be seen.
14. **Review of Inventory** - Prior to leaving a site, the Coordinator gathered the team and reviewed the inventory. She wanted to know if any supplies were needed for the next visit (e.g., masks, gloves). Also, they discussed what went on that was positive or needed to be changed for the next visit.
15. **End of Day** - At the conclusion of the day, the Coordinator went to the front office, often with team members, to say good bye and thank all of the school officials.
16. **Thank-you Letter** - The day after each site visit, the Project Coordinator wrote a letter of appreciation to each school principal. She personalized each letter by using the names of the contact people at the school and the volunteer(s) assigned to the team (Letter of Thanks to School, Appendix 17).
17. **Attention to Detail** - Attention to detail made this project so successful. Considerable research was done to locate portable dental units and other equipment that could withstand travel and would work well. The dental teams were selected with thought, also. Could they work well together, did they reside in an area not too far from the school, could they work well with others?
18. **Weather** - The weather had a significant impact on the project. Unexpected conditions forced the Dental School and statewide schools to close for an extended period of time. In some schools, the number of packets returned by the parents was lower than expected. The momentum appeared to be lost. While it is

difficult to pinpoint the actual reasons, some of the principals and school nurses suggested that the weather was a strong factor.

19. **Schedules** - Prior to setting a date for a site visit, the Project Coordinator should confirm with the school official the schedule times for the third graders – the time that classes begin and end, when the children go to lunch/recess, the bus schedule (when they arrive at the school and leave to take the children home), the time the children have to be back in their classrooms to get ready for their bus or walk home, etc. This information is extremely important for the dental team so that they will know how to pace themselves to see the maximum number of children. Since the lunch/recess break is approximately one hour, it is the only time when the team has a break, can eat lunch and have enough time to get ready for the next session.
20. **Supplies** - A box of supplies should be taken to each site and replenished as needed. These include, but are not limited to scissors, letter opener for the packets, pencils, pens, paper clips, highlighters, Post-its, rubber bands, binder clips, envelopes, etc.
21. **Contact Numbers** - At the site, it is a good idea to have the contact numbers for the contact person at the school, school custodian and nurse in the event anything is needed. Cell phones worked well for these calls.
22. **Special Needs** - At times, extra support was needed to assist a child with special needs. The story of the autistic child was highlighted earlier in the report. It is likely that the child would not have had a screening or sealant application if the team had not been so supportive.
23. **Principal Contact** - The Coordinator was the principal contact for the superintendents, school officials and dental team throughout the project. She was responsible for coordinating all of the arrangements prior to the visits, on the day of the events and attended all 10 sites. Having one person in charge worked well.
24. **Spreadsheet** - As a reference tool for the dental teams, the spreadsheets that were created covered a broad range of information (dates, school names, county locations, names of dental team members, professions, provider numbers, contact information, etc. They were easy to read and comprehensive in scope.
25. **Medical Form** - The medical form that was included in the packet and completed by the parents/guardians provided the team with possible contraindications for screening/sealant placement.
26. **Safety Glasses** - These re-usable glasses are recommended. They were a protection to the eyes of the students in the event of an accidental spill. They and were placed on the students' eyes prior to the application of sealants.
27. **Privacy** - The privacy and confidentiality of each third grader was protected. All data was de-identified. A unique number code was assigned to each document

and data record allowing all screening data, dependent variables and independent variables to be appropriately linked. With regard to data kept after the examinations, the data was kept in a secure location in a locked file cabinet in a locked office. Electronic data was password protected.

28. **Creative Thinking** - Future projects should consider “thinking outside the box”. The creation of Mighty Tooth and the site visit at the National Museum of Dentistry were two examples. Mighty Tooth was created and used as a logo in a number of products developed for the project. The character was colorful, appealing and fun, although his message was serious.
29. **Non-traditional setting** - We found that screenings/sealants can be applied in settings other than in traditional locations. This was demonstrated by the highly successful visit to the National Museum of Dentistry by students at Gwynn’s Falls Elementary School which is located in Baltimore City. The portable dental office was set up with hardly any more effort than in a school site, and the event was very successful. This was a win-win situation, because the children (1) had their teeth screened and sealants applied, where indicated; and (2) had the benefit of a field trip they might not otherwise have participated in. The success of this program suggests that this visit can be replicated with additional schools and opens up the possibility of using other non-traditional settings for future sealant projects.
30. **Postcard Survey** – The results indicated that most of the respondents offered dental sealants and many had accepted new patients for the sealants. Requests for posters were encouraging.
31. **Storage of Materials** – Due to small offices and a lack of closets, finding spaces to store the project materials was a challenge. Because of this, we ordered our supplies and materials (listed in Appendix 7) on a “just-in-time” basis. The rest of the items were stored in our offices. At the conclusion of the project, we were fortunate to be able to store the remaining items in the storage area of the Dental School
32. **Increased Awareness About Sealants** – As a result of this project, awareness about sealants was increased through a number of sources including the Mighty Tooth billboard, outreach efforts, communications with school officials, teachers and staff, children who received sealants, parents who received the permission packets, and others in the community



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Preventing dental caries through school-based sealant programs

Updated recommendations and reviews of evidence

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Health care professionals often provide prevention services in schools to protect and promote the health of students.¹

School programs can increase access to services, such as dental sealant placement, especially among vulnerable children less likely to receive private dental care.² In addition, school programs have the potential to link students with treatment services in the community and facilitate enrollment of eligible children in public insurance programs, such as Medicaid and the Children's Health Insurance Program.³

In 2001, the independent, non-governmental Task Force on Community Preventive Services completed a systematic review of published scientific studies demonstrating strong evidence that school sealant programs were effective in reducing the incidence of caries.^{4,5} The median decrease in occlusal caries in posterior teeth among children aged 6 through 17 years was 60 percent. On the basis of these findings, the task force recommended that school sealant programs be part of a comprehensive community strategy to prevent dental caries.^{4,5} These programs typically are implemented in schools that serve children from low-income families and focus primarily on those

Background. School-based sealant programs (SBSPs) increase sealant use and reduce caries. Programs target schools that serve children from low-income families and focus on sealing newly erupted permanent molars. In 2004 and 2005, the Centers for Disease Control and Prevention (CDC), Atlanta, sponsored meetings of an expert work group to update recommendations for sealant use in SBSPs on the basis of available evidence regarding the effectiveness of sealants on sound and carious pit and fissure surfaces, caries assessment and selected sealant placement techniques, and the risk of caries' developing in sealed teeth among children who might be lost to follow-up. The work group also identified topics for which additional evidence review was needed.

Types of Studies Reviewed. The work group used systematic reviews when available. Since 2005, staff members at CDC and subject-matter experts conducted several independent analyses of topics for which no reviews existed. These reviews include a systematic review of the effectiveness of sealants in managing caries.

Results. The evidence supports recommendations to seal sound surfaces and noncavitated lesions, to use visual assessment to detect surface cavitation, to use a toothbrush or handpiece prophylaxis to clean tooth surfaces, and to provide sealants to children even if follow-up cannot be ensured.

Clinical Implications. These recommendations are consistent with the current state of the science and provide appropriate guidance for sealant use in SBSPs. This report also may increase practitioners' awareness of the SBSP as an important and effective public health approach that complements clinical care.

Key Words. Caries; evidence-based dentistry; pit-and-fissure sealants; preventive dentistry; public health/community dentistry. *JADA* 2009;140(11):1356-1365.



in second and sixth grades, because high percentages of these children are likely to have newly erupted permanent molars.⁶

Available data show that children aged 6 through 11 years from families living below the federal poverty threshold (approximately \$21,800 annually for a family of four in 2008)⁷ are almost twice as likely to have developed caries in their permanent teeth as are children from families with incomes greater than two times the federal poverty threshold (28 percent versus 16 percent).⁸ Overall, about 90 percent of carious lesions are found in the pits and fissures of permanent posterior teeth, with molars being the most susceptible tooth type.^{9,10} Unfortunately, only about one in five children, or 20 percent, aged 6 through 11 years from low-income families has received sealants, a proportion that is notably less than the 40 percent of children from families with incomes greater than two times the poverty threshold.⁸ Significant disparities also exist according to race/ethnicity, with non-Hispanic African American (21 percent) and Mexican American (24 percent) children aged 6 through 11 years less likely to have received sealants than non-Hispanic white children (36 percent).⁸

School sealant programs can be an important intervention to increase the receipt of sealants, especially among underserved children. For example, the results of a study in Ohio confirmed that programs directed toward low-income children substantially increased the use of dental sealants.¹¹ Furthermore, sealant programs could reduce or eliminate racial and economic disparities in sealant use if programs were provided to all eligible, high-risk schools,¹¹ such as those in which 50 percent or more of the children are eligible for free or reduced-price meals.⁶

Differences of opinion among clinicians regarding the management of caries, caries assessment and sealant placement procedures¹²⁻¹⁴ have led some to question the effectiveness of certain practices, such as sealing teeth that have incipient caries or sealing without first obtaining diagnostic radiographs. Partly on the basis of the need to address these questions, the Association of State and Territorial Dental Directors asked the Centers for Disease Control and Prevention (CDC), Atlanta, to review and update sealant guidelines last revised in 1994.¹⁵ Staff members of CDC agreed to undertake this review, especially because new information had become available regarding the effectiveness of sealants, the preva-

lence of caries and sealants in children and young adults in the United States, and techniques for caries assessment and sealant placement.

This report provides updated recommendations for sealant use in school-based sealant programs (SBSPs) (that is, programs that provide sealants in schools).² We also inform dental practitioners about the evidence regarding the effectiveness of SBSPs and practices. This evidence provides the basis for the updated recommendations.

Practitioner awareness is important because dentists in private practice likely will see children who have received sealants in school-based programs and might themselves be asked to participate in or even implement such programs. In addition, this report can help address questions from parents, school administrators and other stakeholders. Finally, we discuss the consistency between these recommendations for SBSPs and evidence-based clinical recommendations for sealant use developed recently by an expert panel convened by the American Dental Association (ADA) Council on Scientific Affairs¹⁶ (the ADA sealant recommendations).

METHODS

The CDC supported two meetings (in June 2004 and April 2005) of a work group consisting of experts in sealant research, practice and policy, as well as caries assessment, prevention and treatment. The work group also included representatives from professional dental organizations. The work group addressed questions about the following topics (Box):

- effectiveness of sealants on sound and carious pit and fissure surfaces;
- methods for caries assessment before sealant application;
- effectiveness of selected placement techniques;
- risk of developing caries in sealed teeth among children who might be lost to follow-up and for whom sealant retention cannot be ensured.

Based in part on the content of the meeting presentations and discussions, the work group drafted recommendations and identified areas in which additional evidence review was necessary.

The work group used published findings of systematic reviews when available. Since the last

ABBREVIATION KEY. ADA: American Dental Association. CDC: Centers for Disease Control and Prevention. IFUs: Instructions for use. RCTs: Randomized controlled trials. SBSPs: School-based sealant programs.

BOX

Topics and questions discussed by work group.**EFFECTIVENESS OF SEALANTS**

- What is the effectiveness of sealants in preventing the development of caries on sound pit and fissure surfaces?
- What is the effectiveness of sealants in preventing the progression of noncavitated or incipient carious lesions to cavitation?
- What is the effectiveness of sealants in reducing bacteria levels in cavitated carious lesions?

ASSESSMENT METHODS

- Which caries assessment methods should be used in school-based sealant programs (SBSPs) to differentiate pit and fissure surfaces that are sound or noncavitated from those that are cavitated or have signs of dental caries?

SURFACE PREPARATION BEFORE ACID ETCHING

- What surface cleaning methods or techniques are recommended by manufacturers for unfilled resin-based sealants (self-curing and light-cured) commonly used in SBSPs?
- What is the effect of clinical procedures—specifically, surface cleaning or mechanical preparation methods with use of a bur before acid etching—on sealant retention?

FOUR-HANDED TECHNIQUE

- Does use of a four-handed technique in comparison with a two-handed technique improve sealant retention?

CARIES RISK ASSOCIATED WITH LOST SEALANTS

- Are teeth in which sealants are lost at a higher risk of developing caries than are teeth that were never sealed?

meeting of the group in 2005, staff members of CDC and another expert group completed a systematic review to determine the effectiveness of sealants in managing caries progression and bacteria levels in carious lesions. The results of that review^{17,18} also supported the ADA sealant recommendations.¹⁶ For questions about other topics for which there were no existing reviews, CDC staff members conducted analyses of the available evidence and published these results in peer-reviewed journals.^{19,21}

Clinical studies. For these analyses, we searched electronic databases (that is, MEDLINE, Embase, Cochrane Library and Web of Science) to identify clinical studies that focused primarily on sealant outcomes resulting from different surface preparation and placement techniques. In some cases, few, if any, clinical trials directly compared in the same study sealant retention resulting from different placement techniques. In these situations, we performed bivariate and multivariate analyses to compare sealant retention across studies. For example, we compared sealant retention in studies that involved handpiece prophylaxis with retention in studies that involved

toothbrush prophylaxis, and studies that involved a four-handed technique with studies that involved a two-handed technique.^{19,21} Lastly, in light of the work group's recommendation that clinicians consult manufacturers' instructions regarding surface preparation before acid etching, we described the range of manufacturers' instructions for surface preparation for unfilled resin-based sealants,²¹ which commonly are used in school programs.²²

Scientific evidence. For each question addressed by the work group, we summarized the relevant scientific information. On the basis of recognized systems for grading the quality of scientific evidence, we assigned the highest level of confidence generally to findings of systematic reviews and randomized controlled trials (RCTs).²³⁻²⁵ Random assignment of study participants to treatment and control groups is the study design most likely to fully control for the effect of other factors on sealant effectiveness or retention. The systematic review involves the use of a standard procedure to synthesize findings from the best available clinical studies, usually RCTs.

We generally assigned lower levels of confidence to findings from studies with other designs. Beyond this qualitative assessment of the evidence, neither the work group nor CDC staff members made any attempt to grade the quality of the evidence or directly relate each recommendation to the strength of the evidence. We did not independently review the design or quality of the systematic reviews and comparative studies. All included studies were published in the peer-reviewed scientific literature.

QUESTIONS AND KEY FINDINGS

The work group addressed the following questions.

Sound pit and fissure surfaces. What is the effectiveness of sealants in preventing the development of caries on sound pit and fissure surfaces?

Systematic reviews have found strong evidence of sealant effectiveness on sound permanent posterior teeth in children and adolescents. A meta-analysis of 10 studies of a one-time placement of autopolymerized sealants on permanent molars in children found that the sealants reduced dental caries by 78 percent at one year and 59 percent at four or more years of follow-up.²⁶ (A meta-analysis is a review that involves the use of quantitative methods to combine the statistical measures from two or more studies and generates a weighted

average of the effect of an intervention, the degree of association between a risk factor and a disease or the accuracy of a diagnostic test.)²⁷

Similarly, a meta-analysis of five studies of resin-based sealants found reductions in caries ranging from 87 percent at 12 months to 60 percent at 48 to 54 months.²⁸ A third meta-analysis of 13 studies also found that sealants were effective, but estimates of caries reductions attributed to sealant placement were lower (33 percent from two to five years after placement).²⁹ The lower estimates might reflect the inclusion of studies that examined sealants polymerized by ultraviolet light (that is, first-generation sealant materials no longer marketed in the United States) and studies involving exposures to other preventive interventions, such as fluoride mouthrinses.²⁹

Summary of evidence. Systematic reviews^{26,28,29} have found that sealants are effective in preventing the development of caries on sound pit and fissure surfaces in children and adolescents.

Noncavitated or incipient lesions. What is the effectiveness of sealants in preventing the progression of noncavitated or incipient carious lesions to cavitation?

A meta-analysis of six studies of sealant placement on teeth with noncavitated carious lesions found that sealants reduced by 71 percent the percentage of lesions that progressed up to five years after placement in children, adolescents and young adults.¹⁷ We define noncavitated carious lesions as lesions with no discontinuity or break in the enamel surface. Findings across each of the six studies were consistent.

Summary of evidence. A systematic review¹⁷ found that pit-and-fissure sealants are effective in reducing the percentage of noncavitated carious lesions that progressed to cavitation in children, adolescents and young adults.

Bacteria levels. What is the effectiveness of sealants in reducing bacteria levels in cavitated carious lesions?

A systematic review of the effects of sealants on bacteria levels in cavitated carious lesions found no significant increases in bacteria under sealants.¹⁸ Sealants lowered the number of viable bacteria, including *Streptococcus mutans* and lactobacilli, by at least 100-fold and reduced the number of lesions with any viable bacteria by

about 50 percent.

Summary of evidence. A systematic review¹⁸ found that pit-and-fissure sealants are effective in reducing bacteria levels in cavitated carious lesions in children, adolescents and young adults.

Assessment of caries on surfaces to be sealed. Which caries assessment methods should be used in SBSPs to differentiate pit and fissure surfaces that are sound or noncavitated from those that are cavitated or have signs of dentinal caries?

In 2001, investigators conducting a systematic review for the National Institutes of Health Consensus Development Conference on Diagnosis and Management of Dental Caries Throughout Life³⁰ concluded that the relative accuracy of

methods of identifying carious lesions could not be determined from the available studies. The systematic review evaluated evidence regarding the following methods: visual inspection, visual/tactile inspection, radiographic assessment, fiber-optic transillumination, electrical conductance and laser fluorescence. The authors also examined the improvement in accuracy resulting from the addition of radiographs to visual assessment in the detection of dentinal lesions on occlusal surfaces.

The review judged the quality of evidence available for assessment of the relative accuracy of the diagnostic methods as “poor.” The authors rated the evidence as poor because there were few relevant studies, the study quality was lower than average and/or the studies included a wide range of observed measures of accuracy. Because of the poor quality of the available evidence, the investigators could not determine the relative accuracy of the assessment methods. Most of the studies compared assessment methods with a histologic determination of caries. For the identification of cavitated lesions, however, the authors of the systematic review also accepted visual or visual/tactile inspection—the principal methods dentists use to identify cavitated lesions—as a valid standard.^{31,32}

More recently, an international team of caries researchers developed an integrated system for caries detection based on a review of the best available evidence and contemporary caries detection criteria.^{33,34} In this system, clinicians use

Systematic reviews have found that sealants are effective in preventing the development of caries on sound pit and fissure surfaces in children and adolescents.

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visual criteria alone to document the extent of enamel breakdown, including distinct cavitation into dentin, the presence of an underlying dark shadow from dentin and the exposure of dentin. Researchers have correlated the visual criteria in this integrated system with the extent of carious demineralization into dentin.^{33,35} With this system, clinicians can determine cavitation into dentin or find evidence of dentinal involvement, such as an underlying dark shadow, without extensive drying of the tooth.^{16,33}

Other widely used criteria for epidemiologic and clinical caries studies also have relied on visual and visual/tactile assessment.³⁶⁻³⁸ These criteria describe frank cavitation as “a discontinuity of the enamel surface caused by loss of tooth substance”³⁸ or an “unmistakable cavity.”³⁶ In these assessments, the examiner uses an explorer primarily in noncavitated lesions to determine the softness of the floor or walls or the presence of weakened enamel. Findings of clinical and in vitro studies, however, indicate that use of a sharp explorer, even with gentle pressure, can result in defects or cavitations that could introduce a pathway for caries progression.³⁹⁻⁴²

Technologically advanced tools such as laser fluorescence are designed to assist the dentist in interpreting visual cues in detecting and monitoring lesions over time, especially early noncavitated lesions. Findings of validation studies indicate that these tools increase the percentage of early carious lesions that are detected, but they also increase the likelihood that a sound surface will be described as carious.^{31,32,43,44}

Finally, investigators in two in vitro studies^{45,46} assessed changes in the accuracy of detecting carious lesions resulting from the addition of low-powered magnification to unaided visual inspection. One study found that inspection with a $\times 2$ magnifying glass did not improve the accuracy of visual inspection alone in the detection of dentinal caries on noncavitated occlusal surfaces.⁴⁶ The other study⁴⁵ found that the addition of $\times 3.25$ loupes to visual inspection alone did improve accuracy in the assessment of occlusal and interproximal surfaces, although more than 90 percent of the clinical decisions to describe a surface as decayed were correct with the use of either technique. The researchers did not report the percentage of clinically decayed surfaces that were limited to enamel or extended into dentin on histologic examination.⁴⁵ They also did not document the prevalence of cavitation among the

decayed surfaces.⁴⁵

Summary of evidence. In 2001, a systematic review³⁹ concluded that the relative accuracy of methods used to identify carious lesions could not be determined from the available studies. More recently, a team of international caries researchers supported visual assessment alone to detect the presence of surface cavitation and/or signs of dentinal caries.^{33, 34} They based this determination on their review of the best available evidence and on contemporary caries detection criteria.

Published studies have suggested that use of a sharp explorer under pressure could introduce a pathway for caries progression³⁹⁻⁴² and that use of technologically advanced tools, such as laser fluorescence, increases the likelihood that a sound surface will be deemed carious.^{31,32,43,44} Investigators in two in vitro studies^{45,46} could not determine improvement in the accuracy of detecting cavitation or dentinal caries on occlusal surfaces with the addition of low-powered magnification.

Surface preparation. What surface cleaning methods or techniques are recommended by manufacturers for unfilled resin-based sealants (self-curing and light-cured) commonly used in SBSPs?

Gray and colleagues²¹ reviewed instructions for use (IFUs) for 10 unfilled sealant products from five manufacturers and found that all directed the operator to clean the tooth surface before acid etching. None of the IFUs specifically stated which cleaning method should be used. Five of the IFUs mentioned the use of pumice slurry or prophylaxis paste and/or a prophylaxis brush, thereby implying, but not directly stating, that the operator should use a handpiece.

Summary of evidence. A review of manufacturers' IFUs for unfilled resin-based sealants²¹ found that they do not specify a particular method of cleaning the tooth surface.

Effect of clinical procedures. What is the effect of clinical procedures—specifically, surface cleaning or mechanical preparation methods with use of a bur before acid etching—on sealant retention?

Recent reviews, including one systematic review,^{21,47} identified two controlled clinical trials that directly compared surface cleaning methods.^{48,49} Donnan and Ball⁴⁹ found no difference in complete sealant retention between surfaces cleaned with a handpiece and prophylaxis brush with pumice and those cleaned with an air-water syringe after the clinician ran an explorer

along the fissures. Similarly, Gillcrist and colleagues⁴⁶ observed no difference between surfaces cleaned with a handpiece and prophylaxis brush with prophylaxis paste and those cleaned with a dry toothbrush. Reported retention rates were greater than 96 percent at 12 months after sealant placement for all four surface cleaning methods. Furthermore, bivariate and multivariate analyses of retention data from published studies involving the use of supervised toothbrushing by the patient or a handpiece prophylaxis (also called rubber-cup prophylaxis or pumice prophylaxis) by the operator revealed similar, if not higher, retention rates for supervised toothbrushing.^{19,21}

The ADA's expert panel,¹⁶ in its review of evidence for the ADA sealant recommendations, found "limited and conflicting evidence" that mechanical preparation with a bur results in higher sealant retention rates in children.⁵⁰⁻⁵² In addition, a systematic review⁴⁷ identified only one controlled clinical trial⁵³ that compared use of a bur and acid etching with acid etching alone. The researchers found no difference in sealant retention at 48 months.^{47,53}

Summary of evidence. The effect of specific surface cleaning or enamel preparation techniques on sealant retention cannot be determined because of the small number of clinical studies comparing specific techniques and, for mechanical preparation with a bur, inconsistent findings. Bivariate and multivariate analyses of retention data^{19,21} across existing studies suggest that supervised toothbrushing or use of a handpiece prophylaxis may result in similar sealant retention rates over time.

Four-handed technique for applying dental sealant. Does use of a four-handed technique in comparison with a two-handed technique improve sealant retention?

The four-handed technique involves the placement of sealants by a primary operator with the assistance of a second person. The two-handed technique is the placement of sealants by a single operator. The work group could not find any direct comparative studies of the four-handed technique versus the two-handed technique with regard to sealant retention or effectiveness.

Furthermore, retention rates in single studies generally reflect multiple factors.¹⁹ For example, Houpt and Shey⁵⁴ reported a sealant retention rate of more than 90 percent at one year in a

single study that involved the use of two-handed delivery to apply sealants, while other authors^{55,56} reported retention rates of less than 80 percent at one year for single studies in which four-handed delivery was used. Results of a multivariate analysis¹⁹ of sealant effectiveness studies showed that use of the four-handed technique increased sealant retention by 9 percentage points when the investigators controlled for other factors.

Summary of evidence. In the absence of direct comparative studies, the results of a multivariate study of available data¹⁹ suggest that use of the four-handed placement technique is associated with a 9 percentage point increase in sealant retention.

Caries risk associated with lost sealants. Are teeth in which sealants are lost at a higher risk of developing caries than are teeth that were never sealed?

A recent meta-analysis of seven RCTs found that teeth with fully or partially lost sealants were not at a higher risk of developing caries than were teeth that were never sealed.²⁰ In addition, although sealant effectiveness in preventing caries is related to retention over time, researchers conducting a systematic review that included only studies in which lost sealants were not reapplied found that sealants reduced caries by more than 70 percent.^{20,26} Thus, children from low-income families, who are more likely to move between schools than are their higher-income counterparts,^{57,58} will not be placed at a higher risk of developing caries because they missed planned opportunities for sealant reapplication in SBSPs.

Summary of evidence. Findings from a meta-analysis²⁰ indicate that the caries risk for sealed teeth that have lost some or all sealant does not exceed the caries risk for never-sealed teeth. Thus, the potential risk associated with loss to follow-up for children in school-based programs does not outweigh the potential benefit of dental sealants.

RECOMMENDATIONS FOR SCHOOL-BASED SEALANT PROGRAMS

The table presents the recommendations of the work group. These are based on the best available scientific evidence and are an update to earlier guidelines.¹⁵ They provide guidance regarding planning, implementing and evaluating SBSPs and should be helpful for dental professionals working with sealant programs.

TABLE

Recommendations for school-based sealant programs.

These recommendations update earlier guidelines¹⁵ and support policies and practices for school-based dental sealant programs that are appropriate, feasible and consistent with current scientific information. This update focuses on indications for sealant placement on permanent posterior teeth that are based on caries status, and methods of assessing tooth surfaces. These recommendations also address methods of cleaning tooth surfaces, use of an assistant during sealant placement and follow-up issues. These topics should be considered in the context of the essential steps in sealant placement, including cleaning pits and fissures, acid-etching surfaces and maintaining a dry field while the sealant is placed and cured.¹⁶ Practitioners should consult manufacturers' instructions for specific sealant products.

School-based sealant programs also can connect participating students with sources of dental care in the community and enroll eligible children in public insurance programs.³ Programs should prioritize referral of students with cavitated carious lesions and urgent treatment needs. For students with cavitated carious lesions who are unlikely to receive treatment promptly, dental practitioners in sealant programs may use interim management strategies. Strategies could include placement of sealants for small cavitations with no visual signs of dentinal caries and atraumatic restorative procedures.^{15,62-64}

TOPIC	RECOMMENDATION
Indications for Sealant Placement	Seal sound and noncavitated pit and fissure surfaces of posterior teeth, with first and second permanent molars receiving highest priority.
Tooth Surface Assessment	<p>Differentiate cavitated and noncavitated lesions.</p> <ul style="list-style-type: none"> ■ Unaided visual assessment is appropriate and adequate. ■ Dry teeth before assessment with cotton rolls, gauze or, when available, compressed air. ■ An explorer may be used to gently confirm cavitations (that is, breaks in the continuity of the surface); do not use a sharp explorer under force. ■ Radiographs are unnecessary solely for sealant placement. ■ Other diagnostic technologies are not required.
Sealant Placement and Evaluation	<p>Clean the tooth surface.</p> <ul style="list-style-type: none"> ■ Toothbrush prophylaxis is acceptable. ■ Additional surface preparation methods, such as air abrasion or enameloplasty, are not recommended. <p>Use a four-handed technique, when resources allow.</p> <p>Seal teeth of children even if follow-up cannot be ensured.</p> <p>Evaluate sealant retention within one year.</p>

DISCUSSION

In the updated recommendations in this report, we use the presence or absence of surface cavitation as a key factor in the decision to apply sealant to the tooth surface. These recommendations complement the ADA sealant recommendations and are consistent with them on virtually all topics addressed by both (for example, sealing teeth that have noncavitated lesions and using a four-handed technique when possible).

The effectiveness of sealants in preventing the development of caries is well established.^{6,26,28,29} Findings of a recent systematic review^{17,18} also confirmed that sealants are effective in managing early carious lesions by reducing the percentage of noncavitated lesions that progress to cavitation

and by lowering bacteria levels in carious lesions. These results should ease practitioners' concerns that placement of sealants on pit and fissure surfaces with early or incipient noncavitated carious lesions or on surfaces of questionable caries status is not beneficial.

One notable difference between the recommendations for sealant use in clinical versus school settings concerns the approach to caries risk assessment.¹⁶ Clinicians periodically assess caries risk at the level of the patient or the tooth to determine if sealant placement is indicated as a primary preventive measure. In SBSPs, clinicians also must consider risk at the level of the school and community. Local and state health departments commonly use the percentage of children participating in the free or reduced-cost federal meal program as a proxy for income to prioritize schools for sealant programs.^{6,11,22}

As described earlier in this report, children from low-income families are at a higher risk of developing caries than are children from wealthier families.⁷ Caries risk among children from low-income families is sufficiently high to justify sealing all eligible permanent molars and is the most cost-effective prevention strategy.^{39,60} Furthermore, providing sealants only to children in a free or reduced-cost lunch program is viewed as stigmatizing and is unacceptable in many schools and communi-

ties.²² Thus, children participating in SBSPs usually receive sealants as a primary preventive measure without undergoing a routine assessment of their caries risk.

The context for making decisions in clinical care and in SBSPs also differs. Important distinctions exist related to the availability of diagnostic and treatment services and the use of care.¹⁵ Clinical care in the private or public sectors typically includes comprehensive diagnostic and treatment services; in contrast, SBSPs limit services to those necessary for successful sealant placement and retention.¹⁵ Furthermore, children who receive sealants only in SBSPs are likely to be from low-income families. Recent data indicate that less than 50 percent of children aged 6 through 12 years from families with incomes of

less than two times the federal poverty threshold had a dental visit in the previous year compared with about 70 percent of their higher-income counterparts.⁶¹

As resources allow, SBSPs work with partners, such as local dental practices, public health clinics, parents, school nurses and local dental associations, to help students without a source of dental care receive comprehensive dental services. For children with cavitated lesions who are unlikely to receive treatment services promptly, dental practitioners in SBSPs may choose to use interim treatment strategies. These could include application of sealants for small cavitations with no visually detectable signs of dentinal caries and atraumatic restorative procedures for larger carious lesions.^{15,62-64}

The following information might be helpful for practitioners who see children who have received sealants through SBSPs. First, sealants do not eliminate dental caries but predictably reduce the occurrence of disease. Thus, practitioners might observe a child with a permanent molar sealed in a school program in which caries has developed. They should keep in mind that the failure to prevent caries in that one sealed tooth does not constitute failure of the entire school sealant program. Similarly, the failure of a sealant to prevent caries in a patient treated in a private dental practice does not constitute failure of the entire sealant protocol. Available evidence consistently indicates that the overall incidence of caries in permanent molars is lower among children who received sealants compared with the incidence in similar children who did not.^{5,26,28,29} Finally, sealant placement is a reversible procedure that easily allows the dentist to administer additional caries management and treatment strategies, such as placement of a restoration, if needed.

In preparing these recommendations, the work group and CDC staff members also reviewed assessment methods for tooth surfaces in SBSPs. Visual assessment for the detection of cavitation is supported by many international experts.^{33,65} Most SBSPs target children with newly erupted permanent molars. The low likelihood of caries in these newly erupted teeth, along with recommendations to seal both sound surfaces and those with noncavitated lesions, argue against the use

of radiographs or technologically advanced tools to detect cavitated lesions in children in SBSPs.

Furthermore, when the likelihood of caries is low, such as in newly erupted molars, these modalities might increase the possibility that a sound surface will be misclassified as carious and be restored prematurely.^{16,32} Thus, these teeth might not receive the preventive benefit of a sealant. In addition, children in SBSPs who are in need of treatment services will be referred to private dental offices or public dental clinics where dentists will obtain radiographs as necessary—and in accordance with current ADA/U.S. Food and Drug Administration guidelines⁶⁶—and conduct additional diagnostic procedures, as appropriate.

The essential steps in placement of unfilled resin-based sealants include cleaning pits and fissures, acid etching tooth surfaces and maintaining a dry field while the sealant is placed and cured.¹⁶ Available evidence suggests that cleaning pits and fissures with a toothbrush by the patient under supervision or with a handpiece prophylaxis by the operator results in similar sealant retention rates.^{19,21,47,48}

Application of a hydrophilic bonding agent between the etched surface and the sealant is a supplemental technique that is not used routinely in SBSPs, and the work group did not evaluate the technique. The ADA's expert panel reviewed the evidence, developed guidance for practitioners and described current types of bonding systems.¹⁶ The ADA panel noted that use of currently available self-etching bonding agents that do not include a separate etching step might result in lower retention than that achieved with the standard acid-etching technique and is not recommended.¹⁶ In addition, the bonding agent must be compatible with the sealant material.

The work group also reaffirmed the importance of evaluating sealants after placement, but it stressed that children for whom follow-up cannot be ensured should still receive sealants. A recent meta-analysis found that teeth with partially or completely lost sealants were at no greater risk of developing dental caries than were teeth that were never sealed.²⁰ Dental professionals can check sealant retention among a sample of participants in an SBSP shortly after placement to ensure the quality of the procedure and materials

School-based sealant programs work with partners, such as local dental practices, to help students without a source of dental care receive comprehensive dental services.

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used.^{6,22} They also can check sealant retention and integrity during the following school year and seal any permanent molars that might have erupted since the procedure. The timing of the evaluation of sealant retention and integrity can depend on several factors, such as local program objectives; changes in dental materials, techniques or personnel; and student movement in and out of the school and school district.

CONCLUSION

The recommendations of the expert work group update earlier guidelines for SBSPs and support practices that are appropriate, feasible and based on the best available scientific evidence. These updated recommendations, along with the supporting rationale, should increase practitioners' awareness of the SBSP as an important and effective public health approach that complements clinical care systems in promoting the oral health of children and adolescents. ■

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UNIVERSITY OF MARYLAND
DENTAL SCHOOL

**DEPARTMENT OF HEALTH PROMOTION
AND POLICY**
Division of Health Service Research

BALTIMORE COLLEGE OF DENTAL SURGERY
650 West Baltimore Street
Baltimore, Maryland 21201-1586
410 706 7967
410 706 4031 FAX

September 25, 2009

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX Elementary School
XXXX XXXXXX XXXXXXXXXXXX
XXXXXXXX, Maryland XXXXX

Dear XX XXXXXXXXXXXX;

About four years ago, a State mandated study that was designed to assess the oral health of elementary school children in public schools was conducted statewide. As you may know, there is overwhelming evidence that tooth decay may result in absence, pain and other problems that affect the ability of children to learn. At that time, on-site oral screening of children in kindergarten and third grades took place at XXXXXXXX XXXXXX, XXXXXXXX, XXXXXXXX, XXXXXXXX XXXXX, XXXXX X XXXXXXX and XXXXXXX XXXXXXXX elementary schools.

Our study found that approximately 31% of school children in Kindergarten and 3rd grade had at least one tooth with dental caries. This study was critically important since data from the survey was used to successfully argue for and implement major statewide reforms in dental care access for children.

In cooperation with the Centers for Disease Control and Prevention (CDC), the Office of Oral Health at the Maryland Department of Health and Mental Hygiene (DHMH), and the University of Maryland Dental School we are following up on our efforts to provide oral screenings on third graders in 15 schools statewide. This time, children who are at risk of tooth decay on the chewing surfaces of their back teeth will have dental sealants applied to these areas. Dental sealants are thin, plastic coatings painted on the chewing surfaces of the back teeth. The procedure is non-invasive, painless, safe and done in compliance with all infection control procedures.

XXXXXX XXXXX is the only school in XXXXXXXXXXXX XXXXXX that we have identified to visit (schools were chosen by a complex sample design). We recognize the importance of minimal interruption to classroom activities and will do everything possible to reduce time away from studies. You can be assured that we will be very flexible in making arrangements. The oral screening/sealant placement is voluntary, and parental consent must be received before a child is seen. The dates and times for the school visit will be at the discretion of the principals. A *Dental Sealant Demonstration Fact Sheet* is enclosed that provides more on the project. I will telephone you shortly to speak with you, or the person you designate, about your permission for this very worthwhile project. We look forward to your assistance in improving the dental health of children in XXXXXXXXXXXX XXXXXXXXXXXX.

Sincerely,

Susan Collier
Project Coordinator

Enclosure

DENTAL SEALANT DEMONSTRATION PROJECT FACT SHEET

Background

With the assistance of a grant from the Centers for Disease Control and Prevention (CDC), the Office of Oral Health, Maryland Department of Health and Mental Hygiene, and the University of Maryland Dental School, are partnering to provide dental screenings/sealants to third graders in selected schools throughout Maryland.

HOW DOES THE DENTAL SEALANT DEMONSTRATION PROJECT OPERATE?

A dental team will bring portable equipment/supplies to 15 statewide elementary schools. Third graders will be given a free oral screening to assess their dental health and determine whether they need sealants. Sealants will be applied free of charge to children who need them. Then, they will return to their classrooms. There will be minimal interruption to classroom activities.

WHAT ARE DENTAL SEALANTS?

Dental sealants are thin, plastic coatings painted on the chewing surfaces of the back teeth. Painted on as a liquid, they quickly harden to form a shield over a tooth. The procedure is **non-invasive, painless, safe and easily done in compliance with all infection control procedures.**

WHY ARE DENTAL SEALANTS PUT ON CHILDREN'S TEETH?

In a recent study of Maryland school children in Kindergarten and 3rd Grade, about 31% had at least one tooth with dental caries. Sealants on the teeth help to avoid dental decay by keeping germs and pieces of food out. Having sealants can save money in the long run by avoiding the need for fillings used to fix decayed teeth.

WHAT IS THE TARGET POPULATION?

The target population is third graders who attend selected public elementary schools. Your school has been selected to participate in this project.

WILL ALL CHILDREN RECEIVE THE DENTAL SCREENING/SEALANTS?

No. Only those children whose parent/guardians have signed an informed consent form will have an oral screening or receive sealants.

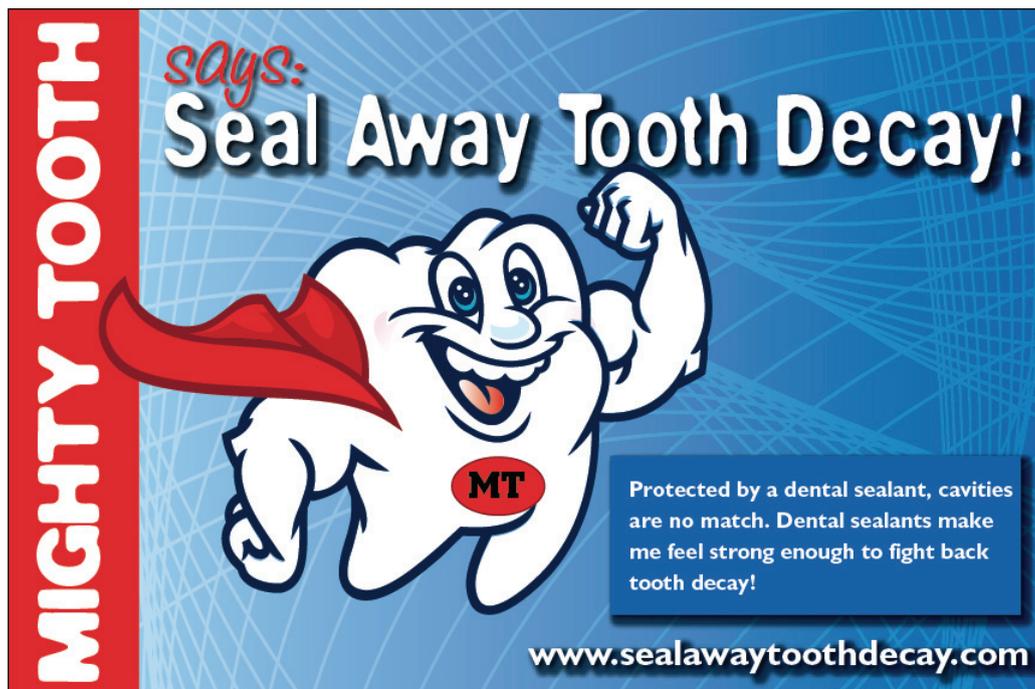
WHERE WILL THE SCREENING/SEALANTS TAKE PLACE?

They will take place at your school in a location chosen by school officials.

WHAT IS THE COST?

There is **no charge** for the oral screening or the sealants placed on the children's teeth.

For additional information, please contact Susan Coller, Project Coordinator, Sealant Demonstration Project at scoller@dhhm.state.md.us or at 410.767.3080.



Dear Parent/Guardian:

A dentist is coming to your child's school to provide dental health screenings and place dental sealants. He/she will look at your child's teeth, count the number of teeth that have cavities or fillings and see if your child needs dental sealants. As part of our overall wellness program we will also be taking the height and weight of your child.

Included in this packet is a brief questionnaire, a short health history form and a consent form that we hope you will complete and return.

Please check the appropriate box:

- Yes, my child may have a dental screening and dental sealant(s) if needed. I am enclosing a signed consent form, completed questionnaire and completed health history in this envelope.
- No, I do not want my child to have a dental screening or dental sealant. However, I have put the completed questionnaire in this envelope.

Your Child's Name (Please print)

Last Name: _____ First Name: _____

Grade: _____ Teacher: _____

Ask your child to return this envelope to his/her teacher as soon as possible.

Thank you for your help.

Dental Screening and Sealant Program

Fact Sheet

BACKGROUND

The Maryland Department of Health and Mental Hygiene (DHMH) Office of Oral Health and the University of Maryland Dental School are partnering to provide dental screenings and sealants (if needed) to third graders in selected schools throughout Maryland. This program has been funded in part with a grant from the Centers for Disease Control (CDC).

HOW DOES THE DENTAL SEALANT DEMONSTRATION PROJECT OPERATE?

A dental team will bring portable equipment/supplies to 15 statewide elementary schools. Third graders will be given a free oral screening to assess their dental health and determine whether they need sealants. Sealants will be applied free of charge to children who need them, then they will return to their classrooms. There will be minimal interruption to classroom activities.

WHAT ARE DENTAL SEALANTS?

Dental sealants are thin, plastic coatings painted on the chewing surfaces of the back teeth. Painted on as a liquid, they quickly harden to form a shield over a tooth. The procedure is **non-invasive, painless, safe and easily done in compliance with all infection control procedures.**

WHY ARE DENTAL SEALANTS PUT ON CHILDREN'S TEETH?

In a recent study of Maryland school children in Kindergarten and 3rd Grade, about 31% had at least one tooth with dental caries. Sealants on teeth help to avoid dental decay by keeping germs and pieces of food out. Having sealants can save money in the long term by preventing decay and avoiding the need for fillings.

WHO WILL PARTICIPATE?

Third graders who attend selected public elementary schools will be invited to participate. Your school has been selected to participate in this project.

WILL ALL CHILDREN RECEIVE DENTAL SCREENING AND SEALANTS?

No. Only those children whose parent/guardians have signed an informed consent form will have an oral screening. Only those children who have been screened may receive sealants.

WHERE WILL THE SCREENING/SEALANTS TAKE PLACE?

They will take place at your school in a location chosen by school officials.

WHAT IS THE COST?

There is **no charge** for the oral screening or sealants.

For additional information, please contact Susan Collier, Program Coordinator, Sealant Demonstration Project at scollier@dhmh.state.md.us or at 410.767.3080.

Dental Screening and Sealant Program

Consent Form

Dear Parent/Guardian:

You are invited to participate in the Maryland Public School Children 2009-2010 Dental Sealant Program. The Maryland Department of Health and Mental Hygiene and the University of Maryland Dental School are coming to your child's school to provide dental health screenings and place dental sealants, as needed, to third grade school children at no cost to you. Dental sealants are thin plastic coatings painted on the chewing part of teeth to prevent cavities or tooth decay. Information obtained from this program will help in the development of a statewide school based oral disease prevention dental sealant program with the goal of reducing dental cavities.

If you agree to participate, a dentist will look at your child's teeth and count the number of teeth that have cavities or fillings and see if your child needs dental sealants. As part of our overall wellness program we will also be taking the height and weight of your child.

The risk to participants is minimal. The screening has no more risk than a regular dental examination. The placement of a sealant has no more risk than the placement of a dental sealant in a dentist's office. The privacy and confidentiality of each participant will be protected as there will be no personal identifiers present in the final analytical data set.

Participation in the program is voluntary. No child will be screened or have a sealant placed unless his/her parent/guardian has signed this consent form. You or your child may withdraw from participation at any time. Additionally, if you choose not to participate, your child may still attend school on the day the screening takes place.

If you have questions or concerns at any time you may speak with our Program Coordinator, Ms. Susan Coller, at 410.767.3080 during normal business hours.

Please print your child's name here _____

Signing this consent form indicates that you have read this consent form (or have had it read to you), that your questions have been answered to your satisfaction, and that you voluntarily agree for your child to participate in this program. Please complete this consent form and return it in the packet that your child brought home.

Parent/Guardian Name (Printed)

Parent/Guardian Signature

Date

**Dental Screening and Sealant Program
Maryland Public School Children 2009-2010
Health History Form**

Student's Name: _____ Date of Birth: ____/____/____

Teacher's Name: _____ Grade in School: _____

Health History

Is your child taking any medications? Yes No

If yes, what medications? _____

Does your child have any allergies? Yes No

If yes, what is he/she allergic to? _____

Does your child have asthma? Yes No

If yes, please describe. _____

Has your child ever had a seizure? Yes No

If yes, please list date of last seizure and any useful information about condition. _____

Does your child have diabetes? Yes No

If yes, does he/she take insulin? _____

Has your child had any other serious illness or operation? Yes No

If yes, please describe. _____

Is there anything else we should know about the health of your child or any dental care they have had in the past? If yes, please describe: _____

Has your child been to the dentist before? Yes No

Parent or Guardian (Print Name): _____

Signature: _____ Date: _____

NOTE: Health history form must be completed and signed for child to participate in screening and sealant activity.

DENTAL SEALANT PROGRAM 2009-2010

Dear Parent or Guardian:

This survey will ask you some questions about your child's dental health. The survey should take about 5 minutes to finish. If there is a question that you do not want to answer, you can skip that question and go on. Remember that all of your answers will be kept strictly confidential. Please, do not put your child's name on this questionnaire.

After you answer the questions, please put the survey and one copy of the signed consent form in the envelope and seal it. Then, return the sealed envelope to your child's teacher. Thank you.

1. What is your Zip Code? _ _ _ _ _
2. When was your child born? __ (Month) __ (Day) ____ (Year)
3. Did your child go to the dentist in the PAST 12 MONTHS? _____ a. Yes
 b. No
4. Are there dentists or dental clinics that your child goes to when he/she needs dental care? a. Yes
 b. No
5. In the PAST 12 MONTHS, did your child have a cavity (decay) in any tooth? _____ a. Yes
 b. No
6. If your child had a cavity, was it treated by a dentist? _____ a. Yes
 b. No
7. In the PAST 12 MONTHS, has your child had a toothache BECAUSE OF A CAVITY? _____ a. Yes
 b. No
8. Does your child have dental insurance? a. Yes, my child has Medicaid, HealthChoice, or Medical Assistance.
 b. Yes, my child has dental insurance OTHER THAN Medicaid, Health Choice, or Medical Assistance.
 c. No, I pay for ALL of my child's dental care myself.

Please answer BOTH questions #9 and #10.

9. Is your child Hispanic/Latino? _____ a. Yes
 b. No
10. What is your child's race? _____ a. Asian or Pacific Islander
 b. Black or African American
 c. Native American or American Indian or Alaska Native
 d. White or Caucasian
 e. Other
11. Does your child QUALIFY for free or reduced-cost lunch at school? _____ a. Yes
 b. No
12. What is the HIGHEST level of education you (parent/guardian) have completed? _____ a. Less than 12th grade
 b. High school graduate
 c. Some college
 d. College graduate



0	1	2	3	4	5	6	7	8	9
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Office Use Only

Thank you for answering our health survey.
 If you have any questions about the survey, please contact Ms. Susan Coller (410-706-3051).
 If you would like, you may call collect.

*Dental Screening and Sealant Program
Maryland Public School Children 2009-2010*

DENTAL REPORT CARD

Dear Parent or Guardian:

Thank you for letting your child take part in the **Dental Screening and Sealant Program**. Your help is greatly appreciated and will help Maryland do a better job of planning statewide dental programs and services in the future.

A licensed dentist gave your child, _____, a dental screening at his/her school on ____ / ____ / _____. The dentist looked at your child's teeth with a dental mirror and a light, but **did not** take x-rays. The dentist recommends that you:

_____ **Keep your child's next scheduled dentist visit.** No problems were found during your child's dental screening. Please plan to take your child to a dentist for regular check-ups every 6 months.

_____ **Make an appointment to see your child's dentist soon.** Minor dental problems were found during your child's dental screening. Please plan to take your child to a dentist soon (ideally in the next 4-6 weeks).

_____ **Make an appointment to see your child's dentist now.** Your child has dental problems that are more serious in nature. You should take your child to a dentist immediately to prevent the possibility of pain or serious health problems.

Dental Sealant Placement:

_____ **Dental Sealants were placed on ____ teeth.** (Dental sealants are placed on back teeth and may not be visible).

_____ **Dental Sealants were not recommended at this time.**

Height and Weight:

Height _____ **Weight** _____

Comments:

Remember that the dental screening examination was not a replacement for a regular dental examination done in a dental office. Since we did not take x-rays during the dental screening, your child's dentist may not completely agree with the results of this screening or additional problems may be discovered.

If your child needs to see a dentist, and you are unable to find one, please know that your child's school has been given a list of resources that may assist you in locating dental services.

Coller, Susan

To: XXXXX XXXXXXXX, XXXXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX,
XXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX, XXXXXXXX
XXXXXX, XXXXX XXXXXXXX, XXXXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX,
XXXXXX XXXXXXXX, XXXXXXXX XXXXXXXX
Subject: Visit to XXXXXXXX XXXXXXXX Elementary School - XXX XXXX

Hello Everyone,

Here is some information for our visit to XXXXX on XXXXX, XXXX XX XXXX:

1. The name/address of the school is XXXXXX Elementary School, XXXXXXXXXX XXXXXXX XXXXX, XXXXX MD XXXXX. Use Map Quest or Google to get directions.
2. The phone number at the school is XXX XXX XXXX.
3. The contact person is XXXXX XXXXX . She works in the office.
4. Other school personnel are: XXXXX XXXXXXX – Principal, and XXXX XXXXXXXX - Vice Principal.
5. XXXXXX XXXX R.N. is the school nurse (XXX.XXX.XXXX). Have spoken to her at times, but Betty is my contact person.
6. **Plan to arrive at 9:00 and leave about 4:00.**
7. Generally, we try to meet on the parking lot and go in as a group. If you get to the school before I do, please go to the front office and introduce yourself. XX. XXXXXX will be there early, and the moving company will deliver the equipment before you arrive. You can start setting up the equipment and supplies.
8. Bring a picture ID in the event you need it. Often, we are asked to sign a log book when we come in and when we leave..
9. We will be in the XXXXX room. It is a good sized room with a sink - down the hall from the office and to the left.
10. Bring your lunch, as it is unlikely that we will have time to leave the building. Third-grade lunch period is 11:30 to noon with recess afterwards.
11. As of today, there are XX children to screen. There will probably be more in the next few days.
12. My cell number is XXXXXXXXXX. Call me if you want additional information or are delayed in coming.
13. I will be coming from XXXXXXXXXX XXXXXXXXXX XXXXXXXX. If anyone wants to meet me and ride together, let me know.

Looking forward to seeing you.
Susan

APPENDIX 7|1

DENTAL SUPPLIES TO BE BROUGHT TO SCHOOLS
PROVIDER AND PATIENT PROTECTION SUPPLIES
disposable lab coats
vinyl or nitrile gloves small
vinyl or nitrile gloves medium
vinyl or nitrile gloves large
vinyl or nitrile gloves extra large
dental masks
hand sanitizer
patient protective eyeglasses
PATIENT TREATMENT SUPPLIES
head rest covers
HVE tips
HVE covers
saliva tips
saliva tip covers
3 way syringe tips
3 way syringe covers
curing light covers
curing light shields (UV light protection)
cotton rolls
cotton roll holder
dry angles
WHO probes / plastic explorers
disposable mirrors
mirror defogging solution
disposable plastic cups
toothbrushes
floss (for operator use)
patient napkins
patient napkin clips (tape?)
gauze (few packs)
disposable instrument tray
I-Bond etchant
etchant syringe tips
disposable micro brushes for etchant / sealant
Clinpro sealant material
sealant applicator tips
rubber mouth props
STERILIZATION AND DISINFECTION SUPPLIES
birex bottles
birex solution
canister of disinfecting wipes for equipment
paper towels
trash bags - regular
trash bags - red bags
dental unit suction line flush
bleach
bleach / water solution container

OFFICE SUPPLIES
pens
pencils
paper pads
scotch tape
masking tape
clipboard
portable boxes for supplies
rolling carts
binding clips
paper clips
rubber bands
MISCELLANEOUS ITEMS
funnel (for liquids into unit)
weight scale
tape measure
yard stick
protective eyewear for patients
electric power strips
heavy duty extension cords
basic tool kit for repairs
extra fuses for dental unit
head lamps
portable dental chair
portable operator stool
portable assistant stool
portable dental unit
curing light
distilled water (sterile water?) for unit
stickers for patients
other incentives
ITEMS TO BE REQUESTED OF ELEMENTARY SCHOOL
room
table
chairs for children
chairs for operator
sink with water (hand washing)
bathroom (liquid disposal)
electric outlet(s)
parent/staff assistant, as possible



UNIVERSITY OF MARYLAND
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**DEPARTMENT OF HEALTH PROMOTION
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BALTIMORE COLLEGE OF DENTAL SURGERY
650 West Baltimore Street
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410 706 7967
410 706 4031 FAX

January 20, 2010

Ms. XXXXXX XXXXXXXX, Vice-Principal
XXXXXX XXXXXXXX Elementary School
XXXX XXXXXXXX XXXX XXXXXXXX
XXXXXXXXXX, Maryland XXXXX

Dear Ms. XXXXX,

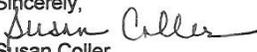
This letter is a follow-up to our recent conversation about the Dental Sealant Demonstration Project. Enclosed are 55 packets. Please ask the third grade teachers to distribute them to the children in their homerooms as soon as the packets arrive.

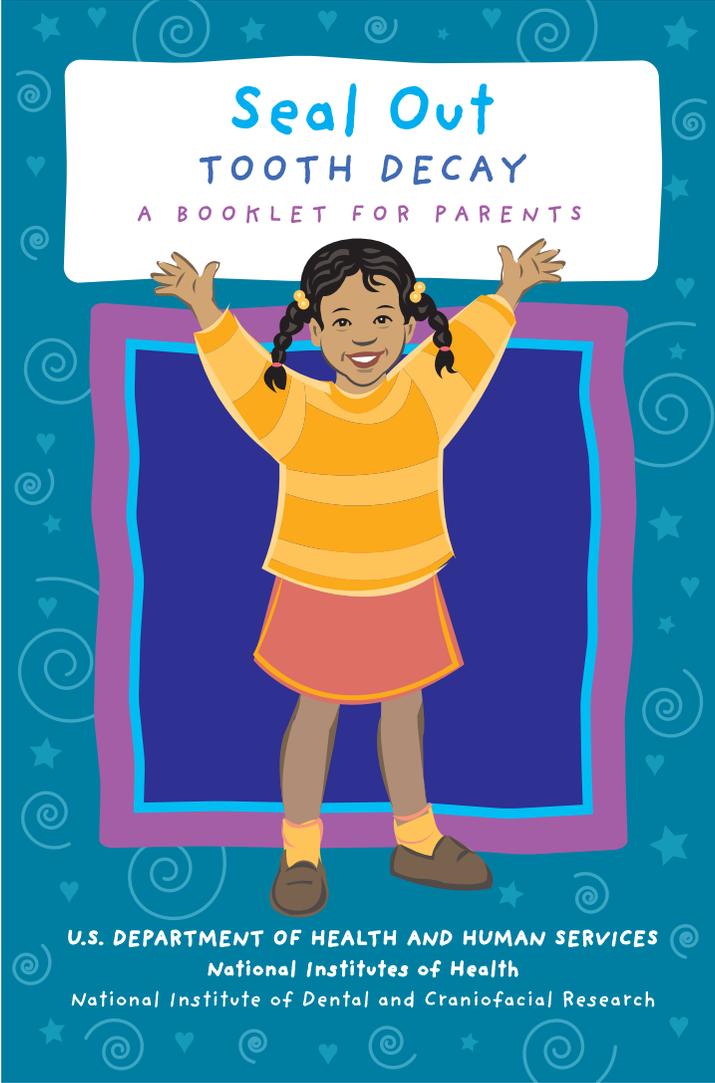
The children should take them home, have their parents/guardians sign the forms in the packet and return the packet to their teachers as soon as possible. We suggest that they be returned no later than two weeks before our visit on XXXXXXXX XX XXXX. Please note: **No child will be screened or have dental sealants applied unless his/her parent/guardian has signed the consent form inside the packet.**

As you suggested, Ms. XXXXXXXX will hold the packets until we arrive on XXXXXXXX XXX. They should be kept unopened in a safe place. Prior to our visit, I will be calling Ms. XXXXXXXX to see how many parents/guardians have given their permission to have their children screened (this information is on the outside of the packet). In this way, we will know how many members of the dental team to send. If possible, the envelope should not be bent since several forms will be scanned.

A list of items that would be helpful to us is attached. If you want more information or have any questions, please call me at my office at XXX.XXX.XXXX or my cell phone at XXX.XXX.XXXX.

Thank you for agreeing to assist us when we come to XXXXX XXXXX to screen/apply sealants to the teeth of third graders on XXXXXXXX XX, XXXX. We believe this is a very worthwhile project, and look forward to meeting you, Ms. XXXXXXXX, Ms. XXXXXXXX, the third graders and other school personnel.

Sincerely,

Susan Collier
Project Manager



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Institute of Dental and Craniofacial Research



What are dental sealants?

Sealants are thin, plastic coatings painted on the chewing surfaces of the back teeth.

Sealants are put on in dentists' offices, clinics, and sometimes in schools. Getting sealants put on is simple and painless. Sealants are painted on as a liquid and quickly harden to form a shield over the tooth.



How are sealants put on?



1 The tooth is cleaned.



2 The tooth is dried, and cotton is put around the tooth so it stays dry.



3 A solution is put on the tooth that makes the surface a little rough. (It is easier for the sealant to stick to a slightly rough surface.)



4 The tooth is rinsed and dried. Then new cotton is put around the tooth so it stays dry.



5 The sealant is applied in liquid form and hardens in a few seconds.



6 The sealant is in place.

Why get sealants?

The most important reason for getting sealants is to avoid tooth decay.

Fluoride in toothpaste and in drinking water protects the smooth surfaces of teeth but back teeth need extra protection. Sealants cover the chewing surfaces of the back teeth and keep out germs and food.

Having sealants put on teeth before they decay will also save time and money in the long run by avoiding fillings, crowns, or caps used to fix decayed teeth.

What causes tooth decay?

Germs in the mouth use the sugar in food to make acids. Over time, the acids can make a cavity in the tooth.

Of course a healthy tooth is the best tooth. So it is important to prevent decay. That's why sealants are so important.

Why do back teeth decay so easily?

The chewing surfaces of back teeth are rough and uneven because they have small pits and grooves. Food and germs can get stuck in the pits and grooves and stay there a long time because toothbrush bristles cannot brush them away.

Who should get sealants?

Children should get sealants on their permanent molars *as soon as the teeth come in* — before decay attacks the teeth.

The first permanent molars — called “6 year molars” — come in between the ages of 5 and 7.

The second permanent molars — “12 year molars” — come in when a child is between 11 and 14 years old.

Other teeth with pits and grooves also might need to be sealed.

Teenagers and young adults who are prone to decay may also need sealants.

Should sealants be put on baby teeth?

Your dentist might think it is a good idea, especially if your child’s baby teeth have deep pits and grooves.

Baby teeth save space for permanent teeth. It is important to keep baby teeth healthy so they don’t fall out early.

Does insurance pay for sealants?

Some health insurance programs pay for sealants. Check with your state Medicaid program or your insurance company for details.



How long do sealants last?

Sealants can last up to 10 years. But they need to be checked at regular dental check-ups to make sure they are not chipped or worn away. The dentist or dental hygienist can repair sealants by adding more sealant material.

What if a small cavity is accidentally covered by a sealant?

The decay will not spread, because it is sealed off from its food and germ supply.

Are sealants new?

No, sealants have been around since the 1960s. Studies by the National Institute of Dental and Craniofacial Research and others led to the development of dental sealants and showed that they are safe and effective.

But many people still do not know about sealants. In fact, fewer than 25 percent of children in the United States have sealants on their teeth.

Besides sealants, are there other ways to prevent tooth decay?

Yes. Using fluoride toothpaste and drinking fluoridated water can help protect teeth from decay.

Water is fluoridated in about two-thirds of cities and towns in the United States. If your water is not fluoridated or if your children's teeth need more fluoride to stay healthy, a dentist can prescribe it in the form of a gel, mouthrinse, or tablet.

Fluoride is the best defense against tooth decay!



Fluoride...

- makes teeth more resistant to decay
- repairs tiny areas of decay before they become big cavities
- makes germs in the mouth less able to cause decay

Fluoride helps the smooth surfaces of the teeth the most. It is less effective on the chewing surfaces of the back teeth. Regular brushing — with fluoride toothpaste — also helps prevent tooth decay.

Sealants and fluoride together can prevent almost all tooth decay.

How can I get dental sealants for my children?

Talk to your dentist, state or local dental society, or health department. Sometimes sealants are put on at school. Check with your school about whether it has a sealant program.





For additional copies of this booklet contact:

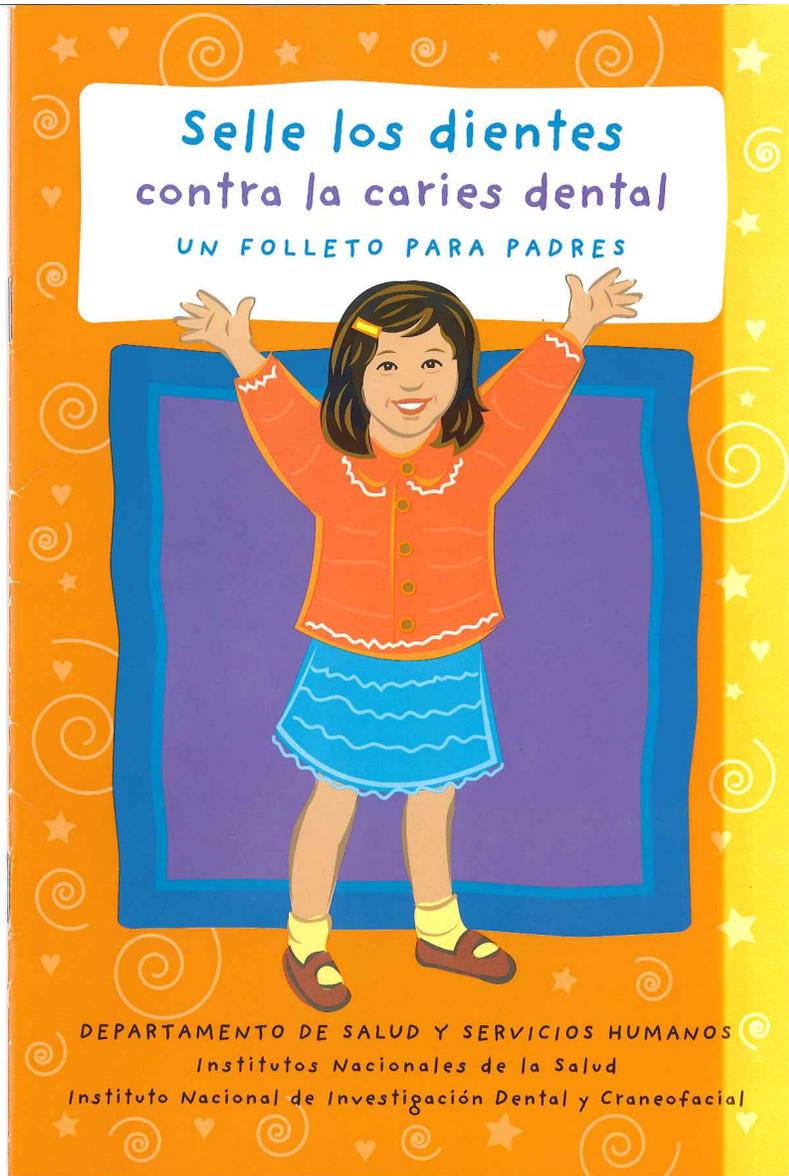


**NATIONAL INSTITUTE OF DENTAL
AND CRANIOFACIAL RESEARCH**

**National Oral Health Information Clearinghouse
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Bethesda, MD 20892-3500
301-402-7364
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Estimado padre de familia:

Este folleto responde preguntas comunes con respecto a los selladores dentales. El folleto describe qué son los selladores, cómo se aplican y cómo previenen la caries dental en los niños. Además de los selladores dentales, hay otras maneras de mantener sana la dentadura de sus hijos:

- **Proteja la dentadura de sus hijos con flúor.** Flúor, el cual usted también puede conocer como "fluoruro", es un mineral que se encuentra en la mayoría de las pastas de dientes y en el agua potable en muchos pueblos y ciudades. Escoja una pasta de dientes que contenga flúor, y verifique con su dentista o pediatra si el agua potable que consume lo contiene. Si no es así, pregunte sobre gotas o tabletas de flúor.



- **Ayude a sus hijos a cepillarse los dientes.** Los niños pequeños no pueden cepillarse los dientes por sí mismos. Ellos necesitarán su ayuda hasta que tengan 7 u 8 años de edad. Comience el cepillado y luego déjelos que terminen, y asegúrese de colocar la pasta dental sobre el cepillo de dientes—utilice solamente una cantidad pequeña.
- **Sirva comidas y bocadillos saludables.** Seleccione alimentos que no contengan mucha azúcar. Limite los bocadillos entre comidas y ofrezca alimentos saludables como frutas o vegetales. Asegúrese también de que sus hijos consuman suficiente leche y productos lácteos. Estos productos son ricos en calcio, un mineral que ayuda a mantener a los dientes y huesos sanos.
- **Lleve a sus hijos al dentista con regularidad.**

Recuerde que los niños aprenden con el buen ejemplo, así que asegúrese de comer una dieta balanceada y de cuidar su propia dentadura!



¿Qué son los selladores dentales?

Los selladores o sellantes dentales son unas capas plásticas, delgadas, que se aplican sobre las superficies de las muelas.

La aplicación de los selladores dentales puede hacerse en los consultorios de los dentistas, en las clínicas y, algunas veces, también en las escuelas. La aplicación de los selladores es sencilla y no causa dolor. Los selladores se aplican "pintando" el diente con una capa líquida que se endurece rápidamente y forma un recubrimiento protector.

Es posible que algunas personas confundan a los selladores con los rellenos para la caries, pero no son lo mismo.

¿Cómo se aplican los selladores?



1 Se limpia la muela.



2 Se seca la muela y se coloca algodón a su alrededor para mantenerla seca.



3 Se esparce una solución sobre la superficie de la muela, para hacerla un poco áspera. (El sellador se pega más fácilmente a una superficie ligeramente áspera).



4 Se enjuaga y se seca de nuevo la muela. Se cambia el algodón alrededor de la muela para mantenerla seca.



5 Se aplica el sellador en forma líquida, pero se endurecerá en pocos segundos.



6 El sellador queda puesto.

¿Por qué se necesitan los selladores?

La razón más importante para aplicar los selladores dentales es prevenir la caries.

El flúor en la pasta de dientes y en el agua potable protege la superficie lisa de los dientes, pero las muelas necesitan más protección. Los selladores cubren las superficies trituradoras de las muelas e impiden la entrada de gérmenes y partículas de comida.

Los selladores aplicados sobre los dientes que aún no tienen caries, también ahorrarán tiempo y dinero a largo plazo al prevenir la aplicación de rellenos, coronas, o cubiertas utilizadas para arreglar la caries.

¿Qué causa la caries dental?

Los gérmenes de la boca convierten el azúcar de las comidas en ácidos. Con el tiempo, los ácidos pueden formar cavidades en los dientes llamadas caries.

Por supuesto que lo mejor es tener dientes sanos. Es importante prevenir la caries. Es por eso que los selladores son tan importantes.

¿Por qué las muelas se carean fácilmente?

Las superficies trituradoras de las muelas son rugosas y desiguales porque tienen pequeñas grietas y ranuras. La comida y los gérmenes se depositan en estas grietas y ranuras, y pueden permanecer allí por mucho tiempo debido a que las cerdas de los cepillos de dientes no logran sacarlos.

¿Cuándo se deben aplicar los selladores?

Los selladores dentales deberán aplicarse *tan pronto como al niño le salgan las muelas permanentes*, antes de que la caries pueda dañarlas.

Las primeras muelas permanentes, llamadas "muelas de los 6 años", salen entre los 5 y 7 años de edad.

Las segundas muelas permanentes, "las muelas de los 12 años", salen cuando el niño tiene entre 11 y 14 años de edad.

Los otros dientes que tienen grietas y ranuras, conocidos como "premolares", también pueden necesitar selladores.

Los adolescentes y los adultos jóvenes que son propensos a la caries quizás también necesiten la aplicación de los selladores.

¿Es necesario aplicar selladores sobre los dientes de leche?

Su dentista puede opinar que es una buena idea aplicar el sellador sobre los dientes de leche, especialmente si los dientes de su hijo tienen grietas y ranuras profundas.

Los dientes de leche mantienen el espacio adecuado para cuando salgan los dientes permanentes. Por lo tanto, es fundamental mantenerlos sanos para que no se caigan antes de tiempo.

¿Paga el seguro por la aplicación de los selladores dentales?

Los programas estatales de Medicaid y ciertas compañías de seguro dental pagan por la aplicación de selladores dentales.



¿Por cuánto tiempo protege una aplicación de sellador dental?

Una aplicación de sellador dental puede proteger los dientes hasta 10 años, pero es necesario que el dentista o la higienista verifique el sellador periódicamente para asegurar que no se ha desprendido o gastado. El dentista o la higienista dental puede arreglar los selladores agregando al diente más material sellador.

¿Qué sucede si se cubre accidentalmente una caries pequeña con un sellador?

Una caries pequeña no se extenderá porque queda aislada de los gérmenes o microbios y de la comida que ayudan a causarla.

¿Son nuevos los selladores?

No, los selladores han existido desde los años sesenta. Las investigaciones del Instituto Nacional de Investigación Dental y Craneofacial (NIDCR) y otras instituciones, llevaron al desarrollo de los selladores y demostraron que éstos son sanos y eficaces.

Sin embargo, muchas personas no saben lo que son los selladores dentales. En los Estados Unidos, menos de 25% de los niños tienen selladores dentales.

¿Cómo puedo obtener los selladores dentales para mis hijos?

Llame a su dentista, a la asociación dental local o estatal, o al departamento de salud. A veces los selladores se aplican en las escuelas. Comuníquese con su escuela para averiguar si tienen un programa para la aplicación de selladores dentales.



Para solicitar otras copias de este folleto, diríjase a:



**NATIONAL INSTITUTE OF DENTAL
AND CRANIOFACIAL RESEARCH**

National Oral Health Information Clearinghouse
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Bethesda, MD 20892-3500

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Reimpreso abril 2006



MIGHTY TOOTH
(EL DIENTE PODEROSO)

dice:
¡No te acerques, carie dañina!

Protegido por un sellador dental, las caries no me afectan. ¡Con el sellador dental estoy fuerte para combatir las caries!

www.sealawaytoothdecay.com

Estimado padre/ tutor:

Vendrá un dentista a la escuela de su hijo/a para hacer chequeos dentales y aplicar un sellador. Esta persona examinará los dientes y las muelas de su hijo/a, contará los que tienen caries o empastes y verá si su hijo/a necesita la aplicación del sellador. Como parte de nuestro programa general de bienestar, también vamos a medir la altura y el peso de su hijo.

En este paquete hemos incluido un breve cuestionario, un formulario corto sobre el historial clínico y un formulario de autorización. Esperamos que los complete y nos los mande.

Marque el recuadro apropiado:

- Sí, mi hijo/a puede realizarse el chequeo dental y recibir la aplicación del sellador si es necesario. He puesto en este sobre un formulario de autorización firmado, un cuestionario respondido y un formulario completado con el historial clínico.
- No, no deseo que mi hijo se realice el chequeo dental y ni la aplicación del sellador. Sin embargo, he puesto el cuestionario respondido en este sobre.

Nombre de su hijo (en letra de imprenta)

Apellidos: _____ Nombre: _____

Grado: _____ Profesor: _____

Pídale a su hijo que le entregue este sobre a su profesor/a tan pronto como sea posible.

Gracias por su ayuda.

Programa de chequeo dental y aplicación de sellador

Formulario de autorización

Estimado padre/ tutor:

Lo invitamos a participar en el Programa de aplicación de sellador dental para los niños de las escuelas públicas de Maryland 2009-2010. El Departamento de Salud e Higiene Mental de Maryland y la Facultad de Odontología de la Universidad de Maryland vienen a la escuela de su hijo para realizar chequeos de salud dental y aplicar sellador (si es necesario) a los niños de tercer grado, sin costo para usted. El sellador dental es un revestimiento de plástico fino que se aplica como si fuera un baño o pintura en la parte de la mordida del diente, con el fin de evitar la formación de caries en los dientes. La información que se obtenga con este programa ayudará a desarrollar un programa de aplicación de sellador dental para la prevención de enfermedades bucales en las escuelas del Estado, con la finalidad de reducir las caries.

Si está de acuerdo en participar, un dentista examinará los dientes y las muelas de su hijo, contará los que tienen caries o empastes y verá si su niño necesita la aplicación del sellador. Como parte de nuestro programa general de bienestar, también vamos a medir la altura y el peso de su hijo.

El riesgo para los participantes es mínimo. El chequeo no entraña más riesgo que cualquier examen dental regular. La aplicación del sellador no representa más riesgo que la misma aplicación de este tipo de sellador dental en una clínica odontológica. Se protegerá la privacidad y la confidencialidad de cada participante, pues no habrá elementos de identificación personal presentes en el conjunto final de datos analíticos.

La participación en el programa es voluntaria. No se le realizará el chequeo ni se le aplicará el sellador a ningún niño a menos que su padre/tutor firme este formulario de autorización. Usted o su hijo/a pueden retirarse y no participar en cualquier momento. Además, si usted opta por no participar, su hijo podrá ir a clases en la escuela el día en que se realice el chequeo.

Si tiene preguntas o alguna preocupación en cualquier momento, puede hablar con nuestra Coordinadora del programa, la Sra. Susan Coller, en el 410.767.3080 en horario laboral normal.

Escriba el nombre de su hijo aquí (en letra de imprenta) _____

La firma de esta autorización indica que usted ha leído este formulario de autorización (o que se lo han leído), que sus preguntas han sido respondidas de forma satisfactoria y que usted está de acuerdo voluntariamente con que su hijo participe en este programa. Complete este formulario de autorización y envíelo de vuelta en el paquete que su hijo/a trajo a casa.

Nombre del padre/tutor (en letra de imprenta)

Firma del padre/tutor

Fecha

Programa de chequeo dental y aplicación de sellador

Formulario del historial clínico

Nombre del estudiante: _____ Fecha de nacimiento: ____/____/____

Nombre del profesor: _____ Grado escolar: _____

Historial clínico

¿Su hijo/a está tomando algún medicamento? Sí No

En caso afirmativo, ¿cuál? _____

¿Su hijo/a tiene algún tipo de alergia? Sí No

En caso afirmativo, ¿a qué es alérgico/a? _____

¿Su hijo/a tiene asma? Sí No

En caso afirmativo, describa. _____

¿Su hijo/a ha tenido un ataque alguna vez? Sí No

En caso afirmativo, diga la fecha del último ataque y ofrezca cualquier información de utilidad sobre la condición del niño/a. _____

¿Su hijo/a tiene diabetes? Sí No

En caso afirmativo, ¿toma insulina? _____

¿Su hijo/a ha tenido cualquier otra enfermedad u operación de gravedad? Sí No

En caso afirmativo, describa. _____

¿Hay algo más que debemos saber sobre la salud de su hijo/a o sobre la atención dental que ha recibido antes? En caso afirmativo, describa: _____

¿Su hijo/a ha ido al dentista antes? Sí No

Padre o tutor (Nombre en letra de imprenta): _____

Firma: _____ Fecha: _____

NOTA: Debe completar y firmar el formulario del historial clínico para que el niño participe en el programa de chequeo y aplicación de sellador dental.

Programa de chequeo dental y aplicación de sellador

Información resumida

ANTECEDENTES El Departamento de Salud e Higiene Mental de Maryland (DHMH, por sus siglas en inglés), la Oficina de Salud Bucal y la Facultad de Odontología de la Universidad de Maryland se han asociado con el fin de brindar servicios de chequeo bucal y aplicación de sellador dental (si es necesario) a los estudiantes de tercer grado de determinadas escuelas de Maryland. Este programa ha sido financiado parcialmente con un subsidio de los Centers for Disease Control (Centros para el control de enfermedades - CDC).

¿CÓMO FUNCIONA EL PROYECTO DE DEMOSTRACIÓN DE APLICACIÓN DE SELLADOR DENTAL? Un equipo de dentistas lleva equipos/materiales portátiles a 15 escuelas de enseñanza primaria del Estado. Se les hará un chequeo gratuito a los estudiantes de tercer grado para diagnosticar su salud dental y determinar si necesitan la aplicación del sellador. Se les aplicará el sellador a los niños que lo necesiten, sin costo alguno, y después estos volverán a sus aulas. Se tratará de interrumpir al mínimo las actividades docentes.

¿QUÉ ES EL SELLADOR DENTAL? El sellador dental es un revestimiento fino de plástico esmaltado que se aplica en las superficies de morder de las muelas. Se aplica como si fuera una pintura o baño líquido y rápidamente forma una protección sobre el diente. El procedimiento **no es invasivo, no causa dolor, es seguro y se realiza con facilidad en conformidad con todos los procedimientos de control de infecciones.**

¿POR QUÉ APLICAR EL SELLADOR EN LOS DIENTES DE LOS NIÑOS? Un estudio reciente realizado en las escuelas de Maryland indicó que el 31% de los niños del Jardín de Infancia y del tercer grado tenía al menos un diente con caries. El sellador dental ayuda a evitar las caries al impedir que los gérmenes y la comida se alojen en la superficie de las muelas. La aplicación del sellador puede ahorrar dinero a largo plazo al evitar la formación de caries y tener que colocar empastes.

¿QUIÉNES PARTICIPAN? Se invita a participar a los estudiantes de tercer grado que asisten a las escuelas públicas de enseñanza primaria. Su escuela ha sido elegida para participar en este proyecto.

¿TODOS LOS NIÑOS SE SOMETERÁN AL CHEQUEO DENTAL Y RECIBIRÁN LA APLICACIÓN DEL SELLADOR? No. Solamente los niños cuyos padres/tutores hayan firmado el formulario de autorización se harán el chequeo dental. Solamente los niños que se hagan el chequeo podrán recibir la aplicación del sellador.

¿DÓNDE SE HARÁN LOS CHEQUEOS/APLICACIÓN DEL SELLADOR? Se harán en la escuela, en un local elegido por sus directores.

¿CUÁL ES EL COSTO? **No se cobra** por los chequeos ni por la aplicación del sellador.

Para obtener información adicional, entre en contacto con Susan Collier, Coordinadora del programa, Proyecto de demostración de la aplicación del sellador, a través de scollier@dhhm.state.md.us o en el 410.767.3080.

PROGRAMA DE APLICACIÓN DE SELLADOR DENTAL 2009-2010

Estimado padre o tutor:

En esta encuesta le formulamos algunas preguntas sobre la salud bucal de su hijo. La encuesta le tomará unos 5 minutos. Si no desea responder alguna pregunta, puede omitirla y pasar a la siguiente. Recuerde que todas sus respuestas tendrán carácter estrictamente confidencial. No ponga el nombre de su hijo en el cuestionario.

Después de responder las preguntas, ponga la encuesta y una copia firmada del formulario de autorización en el sobre y séllelo. Luego, entréguele el sobre sellado al profesor de su hijo. Gracias.

1. ¿Cuál es su Código Postal? __ __ __ __ __
2. ¿Cuál es la fecha de nacimiento de su hijo/a? __ __ (Mes) __ __ (Día) __ __ __ __ (Año)
3. ¿Su hijo/a ha ido al dentista en los ÚLTIMOS 12 MESES? __ a. Sí __ b. No
4. ¿Su hijo/a va a algún dentista o a alguna clínica dental cuando necesita atención odontológica?
__ a. Sí __ b. No
5. En los ÚLTIMOS 12 MESES, ¿su hijo/a presentó alguna carie en algún diente?
__ a. Sí __ b. No
6. Si su hijo/a tuvo alguna carie, ¿lo/a atendió algún dentista? __ a. Sí __ b. No
7. En los ÚLTIMOS 12 MESES, ¿su hijo/a tuvo dolor de muelas DEBIDO A UNA CARIE?
__ a. Sí __ b. No
8. ¿Su hijo/a tiene seguro dental?
__ a. Sí, mi hijo/a tiene Medicaid, HealthChoice o Medical Assistance.
__ b. Sí, mi hijo/a tiene seguro dental, pero NO ES Medicaid, Health Choice o Medical Assistance.
__ c. No, pago TODA la atención dental de mis hijos por mi cuenta.

Responda AMBAS preguntas, la N° 9 y la N°10.

9. ¿Su hijo/a es hispano(a)/latino(a)? __ a. Sí __ b. No

10. ¿Cuál es la raza de su hijo/a?

- a. Asiático o de las islas del Pacífico
- b. Negro o afroamericano
- c. Americano nativo o indio americano o nativo de Alaska
- d. Blanco o caucásico
- e. Otro

11. ¿Su hijo/a CALIFICA para el almuerzo gratis o a bajo costo en la escuela?

- a. Sí __ b. No

12. ¿Cuál es el nivel educativo MÁS ALTO que usted (padre/tutor) ha terminado?

- a. Menos del 12° grado
- b. Graduado de la secundaria
- c. Algunos estudios universitarios
- d. Graduado universitario

Para uso exclusivo del personal de la oficina

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	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9

Gracias por responder esta encuesta de salud.

Si tiene alguna pregunta con respecto a esta encuesta, entre en contacto con la Sra. Susan Coller (410-767-3080). Si lo desea, puede llamar a cobrar.

February is National Children's Dental Health Month

¡Es la Hora de las Matemáticas!

¿Puedes ayudar a Flossy a encontrar la respuesta a este misterio matemático?
 ¡Sigue las pistas de abajo para conseguir la respuesta!

20 minutos – este es el tiempo durante el cual los ácidos pueden atacar a tus dientes cada vez que comes o bebes cosas con azúcar. Si ingieres dos cosas con azúcar al día, ¿por cuánto tiempo habrán sido atacados tus dientes por ácidos al término de un año?

X 2 comidas o bebidas azucaradas al día =

X 7 días por semana =

X 4 semanas al mes =

X 12 meses al año =

÷ 60 minutos en una hora = horas al año!

¡Reduce el consumo de comidas y bebidas azucaradas! ¡Cuando el esmalte de tus dientes es carcomido por los ácidos, ya no vuelve a crecer!

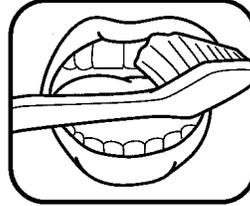


Answer 224 horas

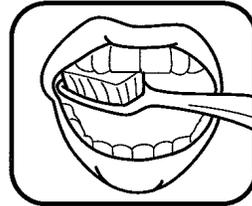
Febrero es el Mes Nacional de la Salud Dental Infantil

Cómo Cepillarse los Dientes

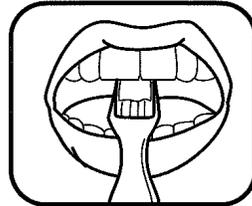
- Coloca el cepillo en un ángulo de 45 grados a la encía.



- Mueve el cepillo de atrás hacia delante con movimientos suaves y cortos.

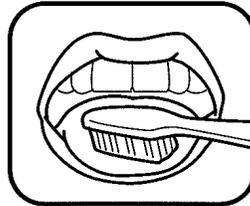


- Cepilla las superficies externas, las superficies internas y las superficies masticatorias de todos los dientes.



- Para limpiar la superficie interna de los dientes de adelante, coloca el cepillo en forma vertical y haz varios movimientos de arriba hacia abajo.

- Cepilla tu lengua para eliminar las bacterias y para mantener tu aliento fresco.







STATE OF MARYLAND

DHMH

Maryland Department of Health and Mental Hygiene
201 W. Preston Street • Baltimore, Maryland 21201

Martin O'Malley, Governor • Anthony G. Brown, Lt. Governor • John M. Colmers, Secretary

Dear Doctor:

You may have noticed a billboard recently posted on Route 140 (Westminster Pike) that promotes the use of dental sealants for children. The billboard features Mighty Tooth, a cartoon character, with a "Seal Away Tooth Decay" message. Enclosed is a picture of the billboard.

With the help of a grant from the Centers for Disease Control and Prevention, the Office of Oral Health at the Maryland Department of Health and Mental Hygiene and the University of Maryland Dental School have partnered to create this project.

The Mighty Tooth billboard highlights the need for dental sealants to help protect against tooth decay. Also featured on the billboard is the Web site address for Mighty Tooth (www.sealawaytoothdecay.com), which is part of this campaign. I hope that you will visit the site and that you will encourage patients and others in your community to do so as well. There is valuable information about sealants and about other resources.

During the next several months, you will receive a very short self-addressed postcard survey to find out if you have received comments from your patients about the billboard. We will also ask if your practice has experienced an increase in dental sealant appointments, including from new patients requesting this preventive service.

In the meantime, if you would like to know more about the Mighty Tooth dental sealant campaign, please contact me. My phone number is 410-767-3080, and my e-mail address is scoller@dhmh.state.md.us.

Sincerely,

Susan Collier
Research Coordinator

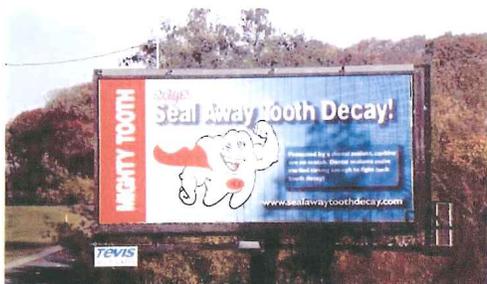


Photo of the billboard located on Route 140, Finksburg.

Toll Free 1-877-4MD-DHMH • TTY for Disabled - Maryland Relay Service 1-800-735-2258
Web Site: www.dhmh.state.md.us

MIGHTY TOOTH
620 West Lexington St.
Baltimore, MD 21201



MIGHTY TOOTH *says:* **Seal Away Tooth Decay!**

www.sealawaytoothdecay.com

The graphic features a superhero tooth character with a red cape and a red circle with 'MT' on its chest, set against a blue background with a white grid pattern. The text 'MIGHTY TOOTH' is written vertically on a red bar on the left. The main headline reads 'Seal Away Tooth Decay!' and the website URL is at the bottom.

Our dental sealant campaign is underway-
we need your feedback!

Please complete our survey below, detach card, and mail back as soon as possible.

1. Have you seen the Mighty Tooth Billboard on Route 140/ Westminster Pike? Yes No
2. Does your dental practice currently offer dental sealants? Yes No
3. Have you accepted any new patients for dental sealants? Yes No
4. Has your practice experienced an increase in dental sealant appointments since November? Yes No
If yes, please indicate percentage of increase _____
5. Is the address on the card your home or dental practice address? Home Dental Practice
6. Would you like a Mighty Tooth poster for your office? Yes No *Please provide return address*

Thank you for taking the time to complete this card.

Mighty Tooth
c/o Laura Kozak
620 West Lexington Street
Office #1110E
Baltimore, MD 21201



MIGHTY TOOTH *says:*
please visit our website at:
www.sealawaytoothdecay.com

Protected by a dental sealant, cavities are no match. Dental sealants make me feel strong enough to fight back tooth decay!



Protected by a dental sealant, cavities are no match. Dental sealants make me feel strong enough to fight back tooth decay!

DENTAL SEALANTS

What are dental sealants?

Sealants are thin, plastic coatings painted on the chewing surfaces of the back teeth. Sealants are put on in dentists' offices, clinics, and sometimes in schools. Getting sealants put on is simple and painless. Sealants are painted on as a liquid and quickly harden to form a shield over the tooth.

Why get sealants?

The most important reason for getting sealants is to avoid tooth decay. Fluoride in toothpaste and in drinking water protects the smooth surfaces of teeth but back teeth need extra protection. Sealants cover the chewing surfaces of the back teeth and keep out germs and food. Having sealants put on teeth before they decay will also save time and money in the long run by avoiding fillings, crowns, or caps used to fix decayed teeth.

What causes tooth decay?

Germs in the mouth use the sugar in food to make acids. Over time, the acids can make a cavity in the tooth. Of course a healthy tooth is the best tooth. So it is important to prevent decay. That's why sealants are so important.

Who should get sealants?

Children should get sealants on their permanent molars as soon as the teeth come in—before decay attacks the teeth.

The first permanent molars—called "6-year molars"—come in between the ages of 5 and 7 years old.

The second permanent molars—"12-year molars"—come in when a child is between 11 and 14 years old.

Other teeth with pits and grooves also might need to be sealed. Teenagers and young adults who are prone to decay may also need sealants.

See the resources listed for additional information.

[Click here](#) to view the Maryland Department of Health and Mental Hygiene's letter to dental professionals.

RESOURCES



Decay booklet.

For more information about dental sealants, download a copy of the National Institutes of Health's *Seal Out Tooth*

View PDF: [English](#) or [Spanish](#)

To find affordable and appropriate dental care services in Maryland and the surrounding regions, download a copy of *The Maryland Oral Health Resource Guide*.



[View PDF](#)



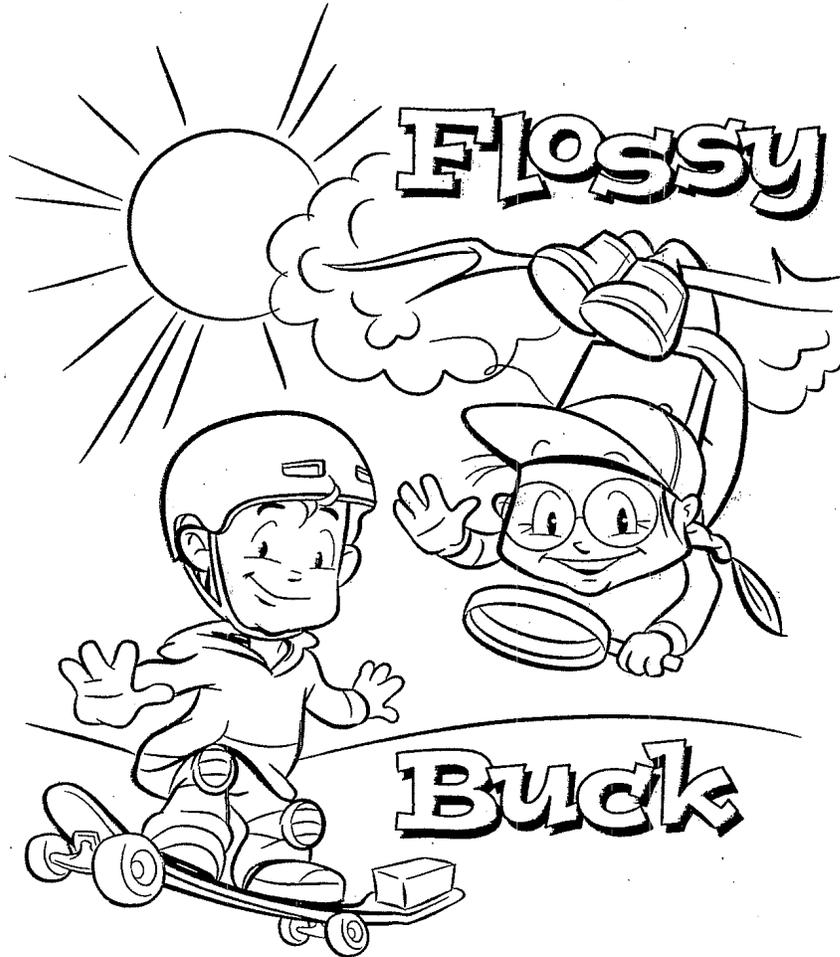
Visit the Maryland State Dental Association's Web site for information on finding a local, private dentist.

[Click here to visit the MSDA site.](#)

February is National Children's Dental Health Month

Meet the McGrinn Twins!

Flossy loves math and science. Buck is big on adventures and sports. They're as different as twins can be but they agree on one thing: the importance of good dental habits!

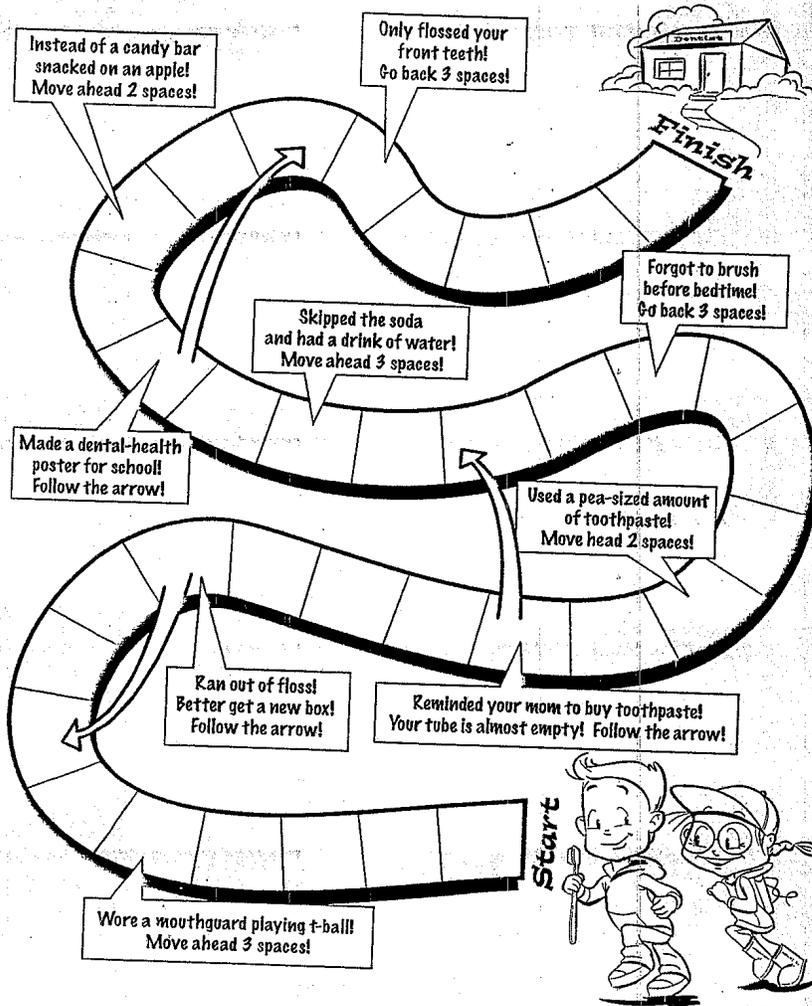


ADA American Dental Association®

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February is National Children's Dental Health Month

Flossy and Buck are racing to the dentist for a check-up. You can go, too. But who gets there first? Using different colored buttons for markers, flip a coin to advance around the board. Heads moves you ahead 2 spaces, tails 1 place. Be sure to follow the instructions where you land!



ADA American Dental Association®

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UNIVERSITY OF MARYLAND
DENTAL SCHOOL

**DEPARTMENT OF HEALTH PROMOTION
AND POLICY**
Division of Health Service Research

BALTIMORE COLLEGE OF DENTAL SURGERY
650 West Baltimore Street
Baltimore, Maryland 21201-1586
410 706 7957
410 706 4031 FAX

May 17, 2010

Ms. XXXXXXXXXXX XXXXXXXXXX, Principal
XXXXX Elementary School
XXXXXX XXXXXXXXXXX XXXXX
XXXXXXXX, Maryland XXXXXXXXX

Dear Ms. XXXXXXXXXXXXX,

On behalf of the Office of Oral Health, Maryland Department of Health and Mental Hygiene and the University of Maryland Dental School, I would like to thank you for allowing our dental team to provide dental screening and sealants to your third graders.

Your school's participation helped to further the ultimate goals of our study - to reduce the prevalence of caries and to design and develop a school-based oral disease prevention program targeted to statewide children who are at high risk for caries.

We were very impressed with the atmosphere of learning at Appeal, the well-behaved children and their interest in our "portable dental office" and dental personnel.

Please extend our special appreciation to Ms. XXXXX who was so supportive of our project. She worked tirelessly to increase the number of parental permission forms.

Again, we thank you and your staff for assisting us, providing supplies and welcoming us to XXXXX Elementary School. We certainly enjoyed our visit!

Sincerely,

Susan Collier
Project Coordinator