



# Dental Public Health Activities & Practices

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## SECTION I: PRACTICE OVERVIEW

### Name of the Dental Public Health Activity:

### Healthy Smiles Fluoride Varnish Program

### Public Health Functions:

Policy Development – Collaboration and Partnership for Planning and Integration  
 Policy Development – Oral Health Program Policies  
 Assurance – Population-based Interventions  
 Assurance – Building Linkages and Partnerships for Interventions  
 Assurance – Building State and Community Capacity for Interventions  
 Assurance – Access to Care and Health System Interventions

### Healthy People 2010 Objectives:

21-1 Reduce dental caries experience in children  
 21-2 Reduce untreated dental decay in children  
 21-10 Increase utilization of oral health system  
 21-12 Increase preventive dental services for low-income children and adolescents

### State:

North Dakota

### Region:

North Central  
Region VIII

### Key Words for Searches:

Fluoride varnish; caries prevention; public health services; tooth decay; early childhood caries

### Abstract:

Research shows that fluoride varnish is highly effective in reducing tooth decay by 25 percent to 45 percent. The Healthy Smiles Fluoride Varnish Program was created to reduce oral health disparities in North Dakota (ND) children and improve access to preventive dental care for underserved populations. The program trains medical and dental professionals (including licensed practical nurses (LPNs), registered nurses (RNs), physicians, physician assistants, dental hygienists and dental assistants) to conduct dental screenings and apply fluoride varnish. Training is provided by the North Dakota Department of Health (NDDoH) oral health consultants (dental hygienists) and is available free of charge. A three-hour module teaches disease progression, demonstrates clinical application technique, and reviews anticipatory guidance. There are 28 single and multi-local public health units (e.g., service centers) throughout the state with staff LPNs and RNs. More than 60 of these healthcare professionals from local public health units have received training through the Healthy Smiles program since 2007. These healthcare providers have expanded preventive oral health care by adding dental screenings and fluoride varnish applications into their routine well-baby and well-child visits. Local public health units cover the costs of staff and dental materials. Services are billed to Medicaid or private insurance for reimbursement. The NDDoH does not incur any operating costs for direct services. All participating local units send monthly demographic and service data on children receiving screenings and fluoride varnished applications to NDDoH for tracking and analysis. Currently, 14 local public health units are participating in the Healthy Smiles program providing fluoride varnish to 1,300 children annually.

### Contact Persons for Inquiries:

Kimberlie Yineman, Oral Health Program Director, North Dakota Department of Health, 600 E. Boulevard Avenue, Dept. 301, Bismarck, ND 58505-0200, Phone: 701-328-4930, Fax: 701-328-1412, Email: [kyineman@nd.gov](mailto:kyineman@nd.gov)

Robyn Stearns, Oral Health Prevention Manager, North Dakota Department of Health, 600 E. Boulevard Avenue, Dept. 301, Bismarck, ND 58505-0200, Phone: 701-328-4915, Fax: 701-328-1412, Email: [rstearns@nd.gov](mailto:rstearns@nd.gov)

## SECTION II: PRACTICE DESCRIPTION

### History of the Practice:

The North Dakota Oral Health Coalition (NDOHC) and the North Dakota Department of Health (NDDoH) Oral Health Program recognize the severity of oral disease experienced by the children in the state as well as the need for increased access to care. In July 2004, the Coalition and Oral Health Program established a partnership and implemented a pilot fluoride varnish program. At that time, ND state law allowed fluoride varnish to be applied by physicians, physician assistants and nurse practitioners only. The justification was that pediatricians and other healthcare professionals are more likely to see a child at an earlier age and have more frequent contacts than a dentist. For the pilot program, the NDDoH oral health consultants (who are dental hygienists) trained medical professionals to provide screening and fluoride varnish for young children (six months through three years of age). In April 2005, the pilot program increased age eligibility from three to twelve years of age for all Medicaid eligible children to improve access to preventive care for a larger population. Physicians can apply for a Medicaid provider number and bill Medicaid directly for reimbursement of services.

In 2007, by emergency measure, the ND Legislature enacted House Bill 1293 into law to also allow registered nurses, licensed practical nurses, advanced practice registered nurses, registered dental hygienists and registered dental assistants (under the general supervision of a dentist or physician) to apply fluoride varnish, upon completion of a training program approved by the ND Board of Dental Examiners. This change of law brought about a wave of medical professionals (especially nurses) seeking training in fluoride varnish screening/application and to implement fluoride varnish programs in the local public health units (service centers providing primary care to the underserved, underinsured and uninsured populations). These providers could deliver fluoride varnish during well-baby and well-child health check-ups. In response to the new legislation, the first training event was sponsored by the NDDoH and the ND Head Start Association. The training was led by a pediatrician (Amos Deinard, M.D., M.P.H.) from Department of Pediatrics at the University of Minnesota and 45 Head Start, public health and dental professionals participated.

It is important to note that ND practice law only allows dental hygienists to apply fluoride varnish with general supervision of a dentist, which limits the dental hygienists to provide fluoride varnish outside of the traditional dental practice settings. Yet, dental hygienists are qualified to train medical professionals to screen and apply fluoride varnish.

In 2007, also in response to the new legislation and the need to increase access to preventative care, the NDDoH Oral Health Program established the Healthy Smiles Fluoride Varnish Program to train healthcare professionals.

### Justification of the Practice:

Tooth decay is still common among children in ND. In 2004, 56 percent of ND third graders had experienced tooth decay. Children from lower income and minority populations have an even higher rate of tooth decay and untreated dental disease. In 2006, only 16 percent of Medicaid-enrolled children received any preventative oral health services.

Access to dental care is also a problem for the state. There are a limited number of dentists and less than 10 pediatric dentists within the state's 69,000 square miles. Geographic and transportation barriers contribute to accessing care. Even though some children qualified for dental care under Medicaid, dentists are unable to accommodate all of the children with dental needs. It is a ND goal to have every child receive needed dental care and to secure a permanent "health home" that combines dental and medical homes for overall health. The Healthy Smiles Fluoride Varnish Program supports this goal.

### Inputs, Activities, Outputs and Outcomes of the Practice:

#### Program Overview

Healthy Smiles emerged in 2007 as the result of a pilot program started in 2004 by the NDDoH but without funds to provide for direct services. The program trains medical and dental professionals and assists partners to provide fluoride varnish in their county health units and local programs. The NDDoH oral health consultants (dental hygienists) are trainers for the Healthy Smiles program. For the initial two years of the program, medical and healthcare providers are the primary groups who received training.

### Program Goals

The primary goal of the Healthy Smiles Fluoride Varnish Program is to reduce early childhood caries and improve access to care for the underserved populations of ND. Other goals include expanding the program to provide direct services (apply fluoride varnish) and develop programs in schools, Early Head Start and Head Start programs, community health centers, mobile van programs, and pediatric medical practices. These goals will require funding for direct services and changes in the practice laws regarding general supervision of dental hygienists to apply fluoride varnish.

### Administration

Healthy Smiles is administered by the NDDoH Oral Health Program. The prevention manager serves as a liaison for the medical and healthcare providers trained in the program; provides guidance for program activities; maintains the training manual with updates; and maintains the incoming service and demographic data from the local public health units.

### Staffing

The NDDoH contracts with dental hygienists as NDDoH oral health consultants (temporary part-time staff) to provide education to school children, public healthcare providers, and the general public. For the Healthy Smiles program, the NDDoH oral health consultants have provided training to medical and healthcare providers (physicians, physician assistants, registered nurses, licensed practical nurses, and advanced practice registered nurses).

### Partnerships

The NDOHC played a major role in researching and recognizing the need for a fluoride varnish program. The coalition was instrumental in starting the pilot program, seeking legislation to increase the type of providers able to apply fluoride varnish, and supporting the NDDoH Oral Health Program in the initial implementation of the Healthy Smiles program during 2007.

The ND Head Start Association, local public health units, and the directors of nursing have created a strong partnership to reduce early childhood caries and improve access to dental care. The Healthy Smiles program would not be operating today without these dedicated partners.

### Training

The Healthy Smiles training consists of a three-hour module that includes a review of the disease process of tooth decay, proper oral hygiene techniques, clinical screening, and clinical application of fluoride varnish. There is no cost for the training but pre-registration is required. Completing an evaluation form is requested at the end of the training. Participants are asked for an ongoing commitment to provide client demographic and service data to the NDDoH to support program expansion and secure program funding.

Upon completion of the Healthy Smiles program, each trained individual is provided a comprehensive manual to use as a reference guide. The manual contains the training slide presentation; standing medical order example form; program forms for charting and reporting; data collection forms; Medicaid reimbursement guidelines including codes and rates; supply information; anticipatory guidance for children and parents; and the caries risk assessment tool (CAT).

To date, the primary training efforts have been devoted to helping local public health units deliver fluoride varnish applications. The local public health units have incorporated the screenings and fluoride applications into their Health Tracks well-baby and well-child routine visits delivered by their staff members.

Once the initial Healthy Smiles training has been completed, there is also an annual training review offered at no cost. The annual review course was developed and released in October 2009 as a tool to ensure screening and application of fluoride varnish remains consistent. The one-hour training review course is designed for previously trained individuals who would like additional clarification of concepts, training or clinical time for applying varnish. The course may be completed only once each year.

### Training Accreditation

The NDDoH Community Health Section is an approved provider of continuing education (CE) by CNE-Net (the education division of the ND Nurses Association) and by the American Nurses Credentialing Center's Commission on Accreditation. The Community Health Section offers CE credits for the initial fluoride varnish training and annual review courses. The Community Health Section issues CE certificates: three contact hours for the initial training and for one contact hour for the annual review.

### Fluoride Varnish

Fluoride varnish is comprised of five percent sodium fluoride (2.26 percent fluoride ion or 22,600 ppm). Fluoride is a controlled mineral in high doses. Therefore, fluoride varnish is only available by prescription. Many manufacturers will not sell to individuals without proof of a medical or dental license. Supplies are ordered directly by the trained local public health unit or medical healthcare provider.

Fluoride varnish is approximately \$1.25 per application. The current ND Medicaid reimbursement is \$20.60 per application (CDT Code D1206).

### Program Outputs

- 1. Providers trained.** Since the beginning of the Healthy Smiles program in 2007, more than 60 medical and healthcare providers (RNs and LPNs), who are staff members of local public health units have been trained. These providers deliver primary care to the underserved, underinsured and uninsured populations.
- 2. Children who received fluoride varnish.** By October 2009, the local public health units were screening and applying fluoride varnish to an average of 111 children per month, totaling over 1,300 children annually.
- 3. A training manual developed.** The Healthy Smiles fluoride varnish manual is a comprehensive reference guide for screening and application of fluoride varnish. (See the "Available Information Resources" section below.)
- 4. Resource materials developed.** Additional resource materials have been developed for the program. For example, a [Fluoride Varnish: Protect Your Child's Smile](#) brochure and post-op instruction fact sheet have been developed for parents. (See the "Available Information Resources" section below.)

### Program Outcomes

The Healthy Smiles Fluoride Varnish Program's training has increased the workforce to deliver fluoride varnish in ND and enabled 14 local public health units to deliver fluoride varnish to high-risk children. These local public health units have added dental screening and fluoride varnish application to their routine Health Tracks well-baby and well-child screening program.

The Healthy Smiles program has established a stable infrastructure that is self-sustaining. Fluoride varnish services provided through the local public health units are increasing access to preventive dental care for the state's underserved, underinsured and uninsured children. The program continues to grow without NDDoH funding for direct services. In addition, the infrastructure built will provide opportunities for expanding services through school-linked/school-based programs, Early Head Start and Head Start centers, mobile dental van programs, and community health centers.

Strong partnerships have been established and continue to grow. In a very short time, the NDDoH, NDOHC, Directors of Nursing and the local public health units have collaborated to successfully promote fluoride varnish and improve access to preventive care.

## Evaluation

The NDDoH is in the process of conducting a Basic Screening Survey 2009-2010 for third grade students. A comparison of current caries incidence rates to the previous two Basic Screening Surveys (conducted in 1999-2000 and 2004-2005) will be made to evaluate changes and trends in oral health status. The survey findings will allow NDDoH to start monitoring and assess the effectiveness of the Healthy Smiles program on reducing tooth decay over time.

In addition, the NDDoH will conduct ongoing evaluation of the fluoride varnish program data collected from the local public health units. The local units voluntarily provide demographic and service data on children who received fluoride varnish to NDDoH on a monthly basis in an effort to assist the NDDoH to evaluate access to preventive care. Effective January 2010, data will be entered into a new Access database, which will allow NDDoH to assess service trends over time and assure that the program is reaching target populations of high-risk children. The NDDoH epidemiologists will evaluate the program and provide ongoing support in data analysis and interpretation.

## **Budget Estimates and Formulas of the Practice:**

The NDDoH did not have allocated funding for the Healthy Smiles program to provide direct services and apply fluoride varnish with program staff. However, there were resources to build and support infrastructure. As a result, the Healthy Smiles program focus on training. Training was implemented by utilizing the oral health consultants funded through a Maternal and Child Health grant as trainers.

The cost in developing and reproducing the training manuals was \$6,500. Five hundred Healthy Smiles training manuals, 10,000 fluoride varnish brochures, and 10,000 post-op instruction sheets were designed and printed at a cost of \$9,000.00. The costs of the manuals, brochures and post-op sheets were covered by the U.S. Centers for Disease Control and Prevention cooperative agreement, which supports infrastructure but not direct services.

## **Lessons Learned and/or Plans for Improvement:**

- The NDDoH addressed and overcame several challenges and barriers to implement a fluoride varnish program including: lack of available funding for direct services; high rate of early childhood caries; a need to reach underserved populations to deliver preventive services; revision of the current practice law; and an inadequate number of dental providers to meet the dental needs of all children. The ND Board of Dental Examiners was not in favor of this dental procedure being delivered by physicians, nurses, dental hygienists or dental assistants. The development of the Healthy Smiles program was based upon assessment and prioritization of needed services, motivation of partners, dedication and commitment of human resources, networking, and collaborative partnerships.
- Partners provided expertise and support to ensure stable infrastructure, create program protocols, develop the program manual, establish training approach, and assist future program expansion.
- The 2007 legislation allowing expansion of providers to include nurses and dental hygienists/assistants (under the general supervision of a dentist) was an important step to increase access to care. The dental providers were apprehensive to have non-dental healthcare providers applying fluoride varnish; however, the medical providers have filled a huge gap to increase access to preventive care.
- The NDDoH is in the process of gathering support for a new public health hygienist statute for the 2011 legislative session. If passed, this proposed bill would allow dental hygienists employed by the State of ND to provide varnish applications, sealants and edentulous care to the underserved populations in schools, health centers, assisted living homes, nursing homes, and other settings under the supervision of the ND State Health Officer. (The ND state health officer does not need to be a physician or medical professional.) If this proposed bill passes, the NDDoH oral health consultants will be able to deliver fluoride varnish through the Healthy Smiles program in medical and childcare settings.

## Available Information Resources:

The Healthy Smiles fluoride varnish manual consists of 80 pages organized into 10 sections. If interested in obtaining a copy of the manual, please contact the NDDoH at 1-800-472-2286, press 1 to request the manual contents. A hard copy will be sent.

Information contained in the manual includes:

- Slide presentation [*includes pictures of tooth decay progression*]
- Fluoride Varnish Reference Guide [*anticipatory guidance birth through three years of age*]
- Provider's Fluoride Varnish Application Guide [*step-by-step instructions for screening and application*]
- Fluoride Varnish Application - Applicable Laws According to the North Dakota Century Code [*a review of legislation*]
- Medicaid Reimbursement Guidelines [information for billing]
- Caries Risk Assessment Tool (CAT) [*an American Academy of Pediatric Dentistry (AAPD) resource*]

A fact sheet and brochure used in the Healthy Smiles program are available at <http://www.ndhealth.gov/oralhealth/FactSheets.htm>:

- [Fluoride Varnish: Parent Information](#) [fact sheet provides post-op instructions]
- [Fluoride Varnish: Protect Your Child's Smile](#) [brochure]

## SECTION III: PRACTICE EVALUATION INFORMATION

### **Impact/Effectiveness**

*How has the practice demonstrated impact, applicability, and benefits to the oral health care and well-being of certain populations or communities (i.e., reference scientific evidence, outcomes of the practice and/or evaluation results)?*

The Healthy Smiles program has created a trained workforce able to incorporate fluoride varnish into their own programs and provide resources to deliver fluoride varnish applications to children at high risk for tooth decay. The Healthy Smiles program has demonstrated continued growth and expansion through the local public health units. Currently, staff from 14 local public health units have been trained and are providing fluoride varnish screenings and applications daily as part of their Health Tracks well-baby and well-child screenings.

The program, through collaboration with partners, has established infrastructure (functional systems, people and resources) to deliver preventive dental care to the populations in need. The basic infrastructure is in place for the Healthy Smiles program to expand from local public health units to school-linked or school-based programs.

### **Efficiency**

*How has the practice demonstrated cost and resource efficiency where expenses are appropriate to benefits? How has the practice demonstrated realistic and reasonable staffing and time requirements? Provide unit cost analysis or cost-benefit analysis if appropriate.*

The Healthy Smiles program is cost and resource efficient by implementing a training approach to leverage resources with partners. The program utilizes existing NDDoH oral health consultants to provide Healthy Smiles training for medical and healthcare providers. These activities fit into the current scope of practice for the oral health consultants and are covered by the current budget without additional funding requirements. Local partners (e.g., the local public health units) are covering operational expenses to deliver fluoride varnish, including staffing and dental materials, and bills Medicaid for reimbursement.

### **Demonstrated Sustainability**

*How has the practice showed sustainable benefits and/or how has the practice been sustainable within populations/communities and between states/territories? What mechanisms have been built into the practice to assure sustainability?*

The Healthy Smiles program continues to grow. Fluoride varnish services are expanding across ND to reach more underserved, underinsured and uninsured children. The program's growth reflects the commitment of internal partners (within NDDoH) as well as external partners (other state/county/local agencies and communities).

The benefits of the Healthy Smiles program are sustainable by incorporating fluoride varnish services into existing local program infrastructure. These efforts support "health homes" providing medical and dental preventive care, which will further sustain access to preventive dental services. The Healthy Smiles program is enjoying a continued interest from medical and healthcare providers wanting to further their professional training on oral health.

### **Collaboration/Integration**

*How has the practice built effective partnerships/collaborations among various organizations and integrated oral health with other health projects and issues? What are the traditional, non-traditional, public and private partnerships/collaborations established by the practice for integration, effectiveness, efficiency and sustainability?*

The goals in ND are to reduce early childhood caries and tooth decay, increase access to care and provide a dental and medical home combination for our underserved, underinsured and uninsured children. Healthy Smiles partners have common interests in improving oral health and are committed to achieving these goals. Collaboration with the NDOHC, local public health units,

directors of nursing, and medical and healthcare providers continue to grow for the Healthy Smiles program.

**Objectives/Rationale**

*How has the practice addressed HP 2010 objectives, met the National Call to Action to Promote Oral Health, and/or built basic infrastructure and capacity for state/territorial/community oral health programs?*

The Healthy Smiles program contributes its efforts to address several Healthy People 2010 objectives: reduce caries experience in children, reduce untreated dental decay in children, and increase prevention of dental services for poor children. The Healthy Smiles program also responds to the National Call to Action to Promote Oral Health by promoting prevention, improving quality of life and eliminating oral health disparities.

**Extent of Use among States:**

*Describe the extent of the practice or aspects of the practice used in other states.*

Data from FY 2007-2008 reported in the 2009 Synopsis of Dental Public Health Programs indicates 25 states (including ND) currently maintain a fluoride varnish program. These states aim to prevent dental caries in children, increase access to care, and reduce oral health disparities. Fluoride varnish programs vary in funding, staff resources, services sites, and arrangements with partners in delivering fluoride varnish in community settings.