



Center *for* Rural Health

Fluoride Varnish Application among North Dakota Family
Practice Physicians & Pediatricians:

2016 Chartbook

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The Center for Rural Health (CRH), established in 1980, is one the nation's most experienced organizations committed to providing leadership in rural health. The CRH mission is to connect resources and knowledge to increase the health status of people in rural communities. The CRH serves as a resource to healthcare providers, health organizations, citizens, researchers, educators, and policymakers across the state of North Dakota and the nation. Activities are targeted toward identifying and researching rural health issues, analyzing health policy, strengthening local capabilities, developing community-based alternatives, and advocating for rural concerns. Although many specific activities constitute the agenda of the Center, four core areas serve as the focus: (1) education and information dissemination; (2) program development and community assistance; (3) research and evaluation; and (4) policy analysis. The CRH is also home to six national programs.

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Executive Summary

In September 2015, the Center for Rural Health (CRH) was funded by the North Dakota Department of Health's (DoH's), Oral Health Program to study varnish application in clinical practices. The CRH received a subcontract from the Centers for Disease Control and Prevention. As part of this contract, CRH researchers developed and performed a survey of all North Dakota pediatricians and family practice physicians. A majority of the data were collected in early 2016. This chartbook presents the findings of this 2016 survey.

Key Findings

- Pediatricians and family practice physicians agreed or strongly agreed (93%) that oral health is an important aspect of overall pediatric health. However, fewer providers agree or strongly agree that oral health of pediatric patients is a primary concern for clinical providers (72%).
- A majority of the survey respondents did refer their pediatric patients to a dentist when needed (92%). Family practice physicians were far less likely than pediatricians to have a list of dentists for referral (46% and 80% respectively).
- A majority of pediatricians (60%) and family practice physicians (82%) replied that no one within their clinics provided varnish. Likewise, only 10% of the providers had billed for fluoride varnish in the last year.
- Though there was a variability in the rate of fluoride varnish application, providers did agree or strongly agree that fluoride varnish is an effective preventative oral health care measure (90% of pediatricians and 82% of family practice physicians).

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Introduction

Fluoride varnish is a pale yellow gel that is applied to a child's teeth using a soft brush. The gel sets quickly, and provides protection against tooth decay. Fluoride varnish has been scientifically proven to prevent or reduce decay, with a more significant effect when accompanied with regular brushing. It is recommended that pediatric patients begin receiving varnish twice a year by the age of two, for best results. The American Academy of Pediatrics reports that varnish may be applied in the clinic setting two to four times per year beginning at six months of age. The number of treatments should be determined by the child's risk of tooth decay.¹

In September 2015, the American Academy of Pediatrics updated the schedule of "anticipatory guidance and screenings recommended during well-child visits." The recommendations included a new subheading related to the administration of fluoride varnish for pediatric patients six months through five years of age.² The American Academy of Pediatrics, along with the United States Preventive Services Task Force, recommends that once teeth are present, fluoride varnish may be applied every three to six months in a primary care setting.³

North Dakota physicians, physician assistants, nurse practitioners, registered nurses, and licensed practical nurses may all assess oral health, apply fluoride varnish, and bill for the service in a primary care setting. Legislation passed in 2007 indicated that healthcare providers could assess oral health and provide varnish in an effort to help prevent tooth decay for high-risk children ages birth through 20 years. Though application has been a billable service, and is a recommendation of the American Academy of Pediatrics, it was believed that many North Dakota healthcare providers were still not providing varnish to eligible patients. The CRH sought to identify how knowledgeable providers were about fluoride varnish application, and how many were providing and billing for the service.

This chartbook contains the findings of the 2016 survey of all North Dakota Pediatricians and Family Practice Physicians. This document does not provide detailed discussion of the results, nor does it provide policy or community recommendations. Output includes aggregate data stratified by provider type (family practice and pediatricians).

It is important to note that with only 52 survey participants there are categories that contain few responses. When interpreting the data as presented, please note the small number of responses and take into consideration the number of providers that the data are describing. When the percentage is not an accurate reflection of the data because of a small cell size, the hard number of providers will be presented. Percentages have also been rounded to the nearest whole number. In some instances, this leads to categorical totals equaling more than 100.

Methods

Researchers at the CRH developed a questionnaire that was sent to all North Dakota pediatricians and family practice physicians. The survey draft was reviewed by: the president of the North Dakota chapter of the American Academy of Pediatrics; six staff at the North Dakota DoH Oral Health Program including the program director and the grant manager; and, other staff at the CRH. After securing support from state partners, researchers obtained approval of the study from the University of North Dakota Institutional Review Board.

The CRH contacted the North Dakota Chapter of the American Academy of Pediatrics. There were 92 members at the time of survey. The electronic questionnaire, and cover letter, were disseminated by the chapter president to all members on three occasions. In addition, paper copies of the survey and cover letter were made available and disseminated to those in attendance at the 2016 Pediatrics Spring Conference in Bismarck, North Dakota. Learn more about the North Dakota chapter of the American Academy of Pediatrics at www.ndaap.com.

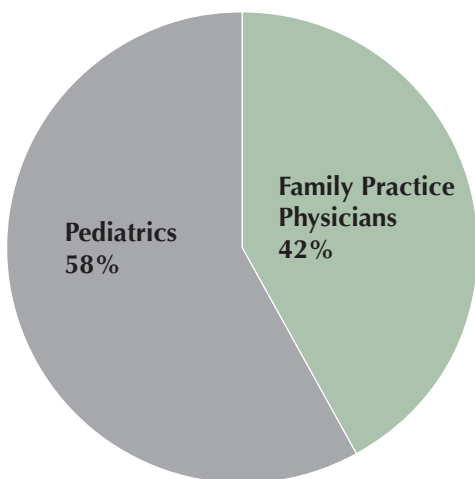
The North Dakota Academy of Family practice physicians also disseminated the electronic survey via email to its 238 members on three occasions. You can learn more about the North Dakota Academy of family practice physicians at www.ndafp.org.

The questionnaire asked participants to identify: whether or not an oral health risk assessment tool was employed in their practice; the rates of fluoride varnish application; billing practices for fluoride varnish applications; available resources on oral health care in their clinical practices; and knowledge of, as well as participation in, the free Smiles for Life training. Information about Smiles for Life is covered in presentation of the data.

Response Demographics

Of the 92 pediatricians that received an invitation to participate, 30 completed the survey for a 33% response rate. Of the 238 eligible family practice physicians that were notified of the survey, 22 completed for a 9% response rate. The most significant limitation of this study is the small number of responses and the subsequent low response rates. These low response rates are likely due to the many factors and may also reflect the relatively low priority of oral health issues among providers.

Figure 1. Percent of Respondents by Provider Type



Nearly all pediatricians (90%) and family practice physicians (96%) either agreed or strongly agreed that oral health was an important aspect of overall pediatric health; however, fewer providers agreed or strongly agreed that oral health of pediatric patients was a primary concern for clinical providers (73% and 68% respectively).

Referral & Assessment

A majority of the providers surveyed referred their pediatric patients to a dentist when needed (92%). Family practice physicians were far less likely than pediatricians to have a list of dentists in their offices for referral (46% and 80% respectively).

The American Academy of Pediatrics (AAP) has two policy statements related to the use of fluoride in caries prevention among primary care providers, and maintaining and improving the oral health of young children.⁴ The AAP recommends:

- All children begin receiving oral health risk assessments by six months of age by a qualified pediatrician or pediatric healthcare professional.
- Risk assessment and clinical evaluation should be done at every well child visit to determine which infants would benefit from early, more aggressive intervention.

An oral health risk assessment is a tool developed to aid in the documentation of caries risk among children based on both the mother or primary caregiver's oral health, and the child's. When surveyed, only 27% of pediatricians and 18% of family practice physicians indicated that there was an oral health risk assessment tool at their clinical practice. Figure 2. While a majority of providers were not aware of a risk assessment tool, 40% of pediatricians and 36% of family practice physicians stated that their clinic conducted oral health risk assessments for pediatric patients, though roughly a third of those conducting assessments did so only for at-risk pediatric patients. See Figure 3.

Figure 2. Percent of Providers' Practices with an Oral Health Risk Assessment Tool

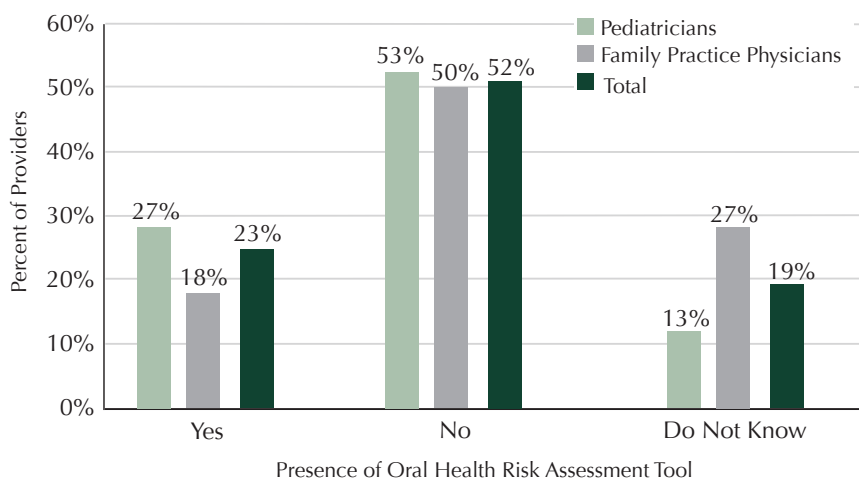
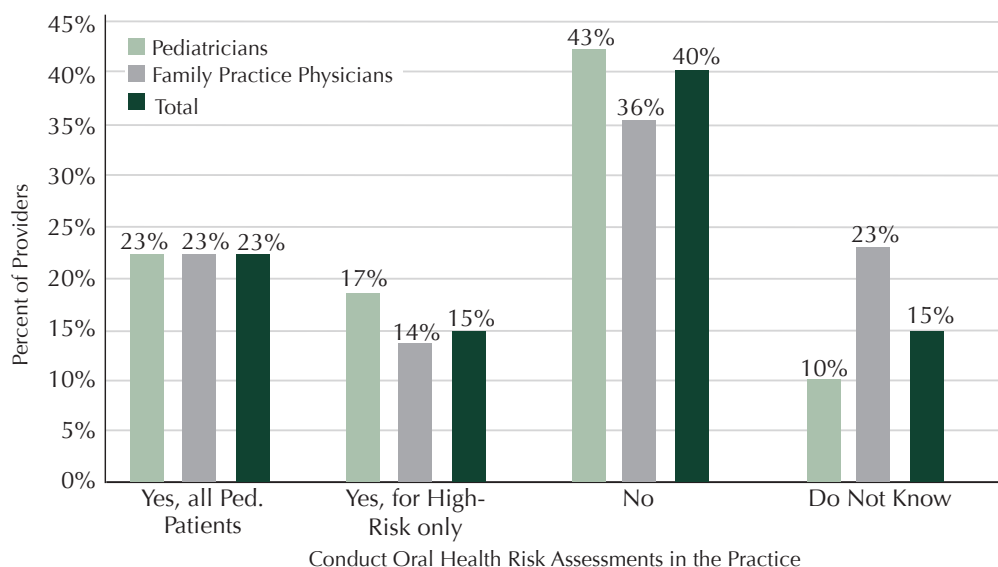


Figure 3. Percent of Clinical Practices where Providers Conduct Pediatric Oral Health Risk Assessments



While less than half of providers were completing oral health risk assessments among their pediatric patients, they did agree and strongly agree that well-child visits were an appropriate time to complete the risk assessment. Figure 4. Additionally, more than half of providers agreed that oral health risk assessments would be completed during well-child visits if it were required in the well-child check list. Figure 5. Providers can access a risk assessment tool online: www.aap.org/oralhealth/docs/RiskAssessmentTool.pdf.

Figure 4. Well-Child Visits are Appropriate Time to Complete an Oral Health Assessment

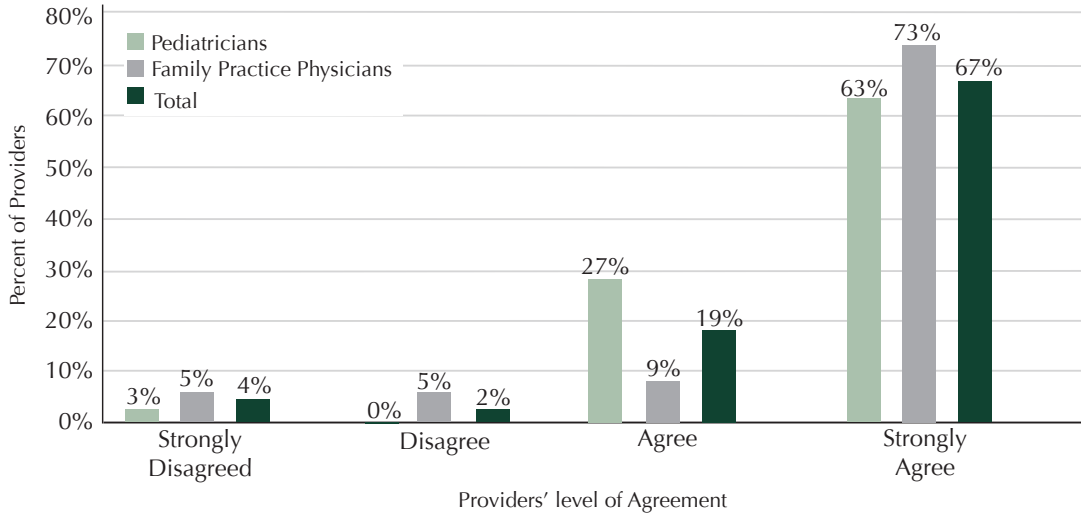
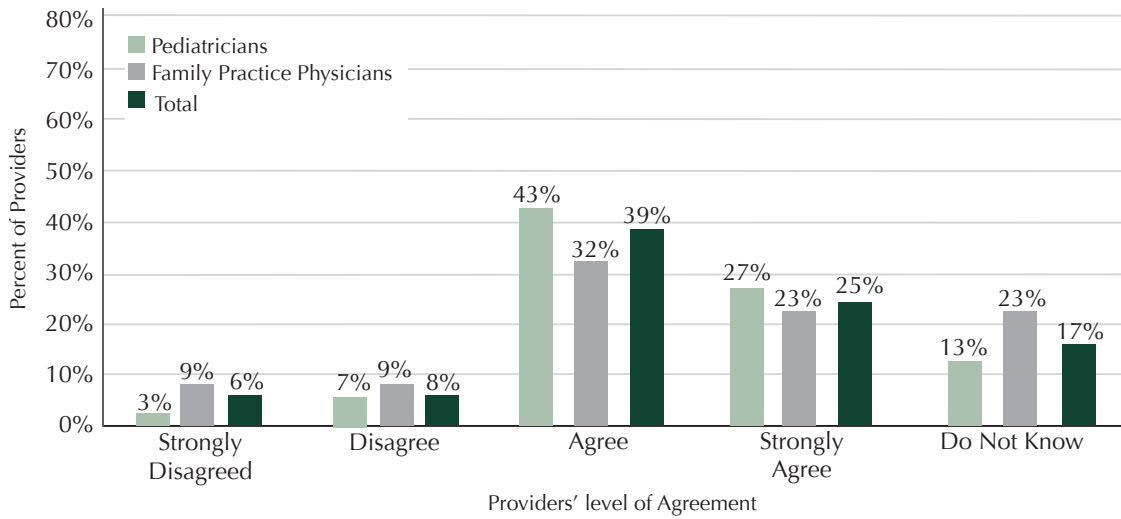


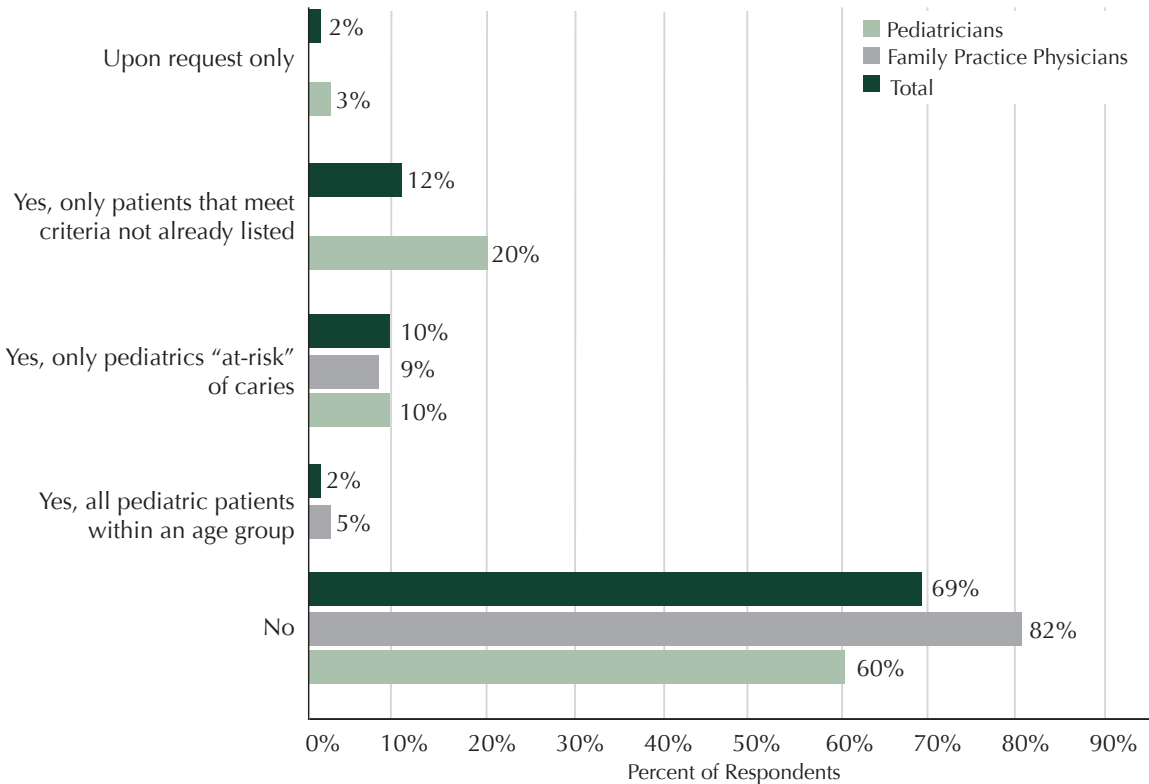
Figure 5. If Required in Well-Child Visit Checklist, Oral Health Assessments Would be Completed



Fluoride Varnish Application

Only one respondent indicated that they, or someone within their clinic, applied fluoride varnish for all pediatric patients within a particular age group. Figure 6. A majority of pediatricians (60%) and family practice physicians (82%) replied that no one within the clinic provided varnish to any patient set. Likewise, only 10% of all providers had billed for fluoride varnish in the last year. Of those 10% of all providers who had applied varnish, 39% had actually billed for the services. Figure 7.

Figure 6. Application of Fluoride Varnish in Clinic Settings



Family practice physicians who had applied varnish were more likely to have billed for the service than pediatricians who had applied varnish. Figure 7. It may be that both rates of application of, and billing for, fluoride varnish were low because only 31% of providers believed that other providers were aware that it was a reimbursable service. Roughly 43% of respondents agreed or strongly agreed that pediatric providers were unaware that they could be reimbursed for the application of fluoride varnish in the clinic setting. Figure 8.

Figure 7. Percent of Providers who Applied Fluoride Varnish who Billed for it

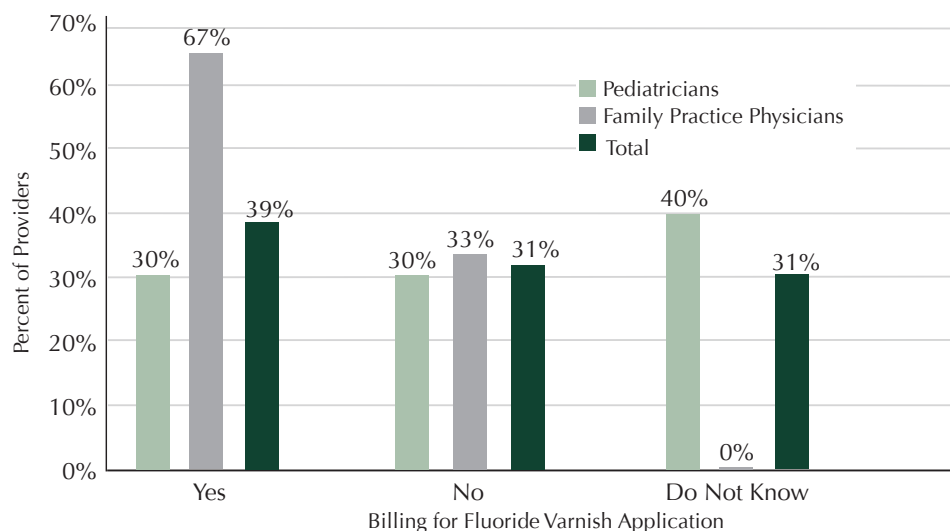
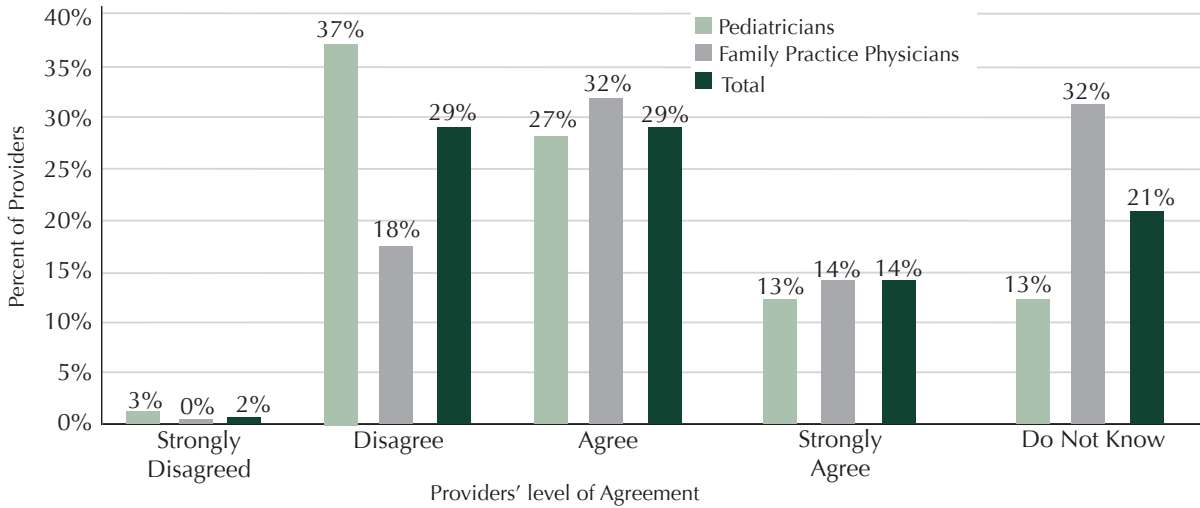


Figure 8. Pediatricians Unaware that Application of Varnish is a Reimbursable Service: Level of Agreement



Application of fluoride varnish was low among providers, yet a majority of providers (60%) agreed or strongly agreed that well-child visits were an appropriate time to apply the varnish. Figure 9. Pediatricians were far more likely to identify the well-child visit as an appropriate time for varnish application than family practice providers (70% compared to 45%). The same pattern was evident when asked if varnish would be applied to pediatric patients if fluoride varnish application were required in the well-child visit checklist. Figure 10. Still, only 64% of providers agreed or strongly agreed that varnish would be applied if a requirement, and again, pediatricians were more likely to comply than Family practice physicians (70% and 55% respectively).

Figure 9. Well-Child Visits are Appropriate Time to Apply Fluoride Varnish

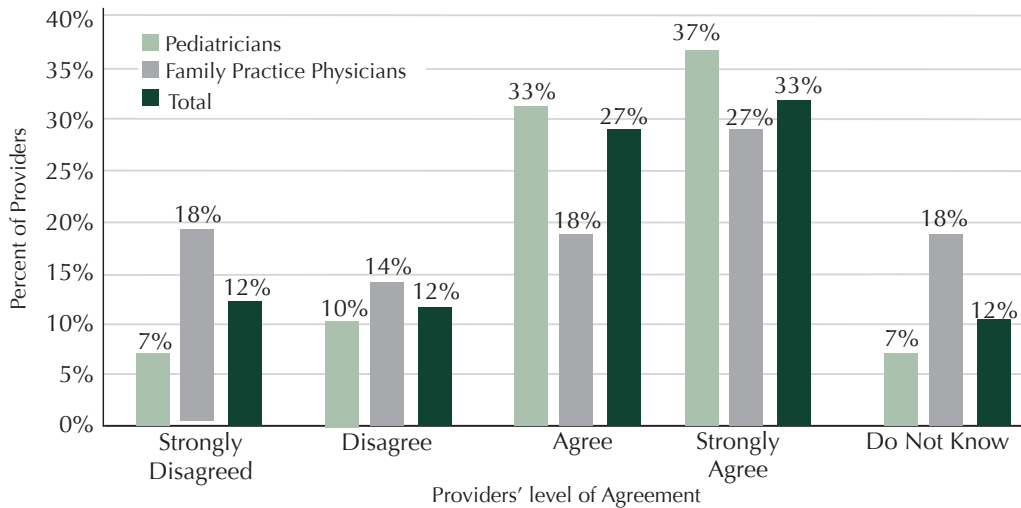
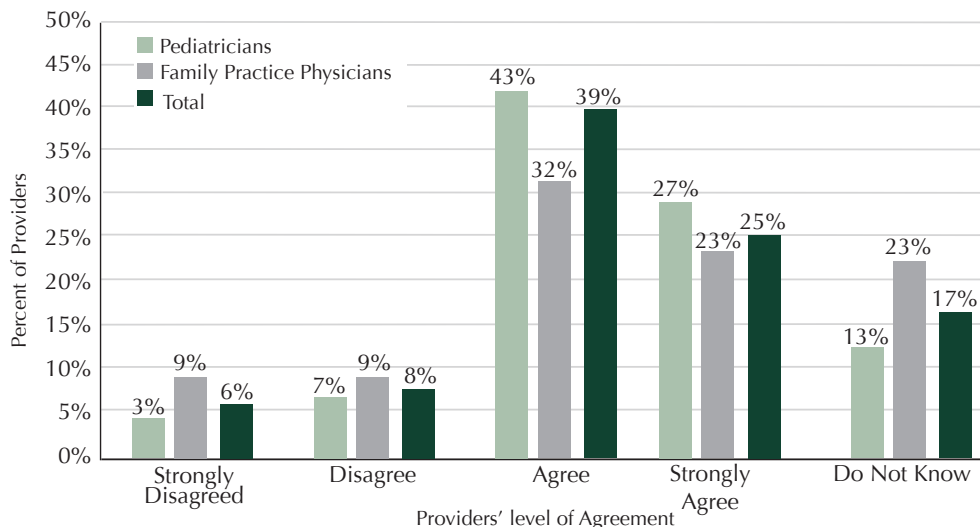
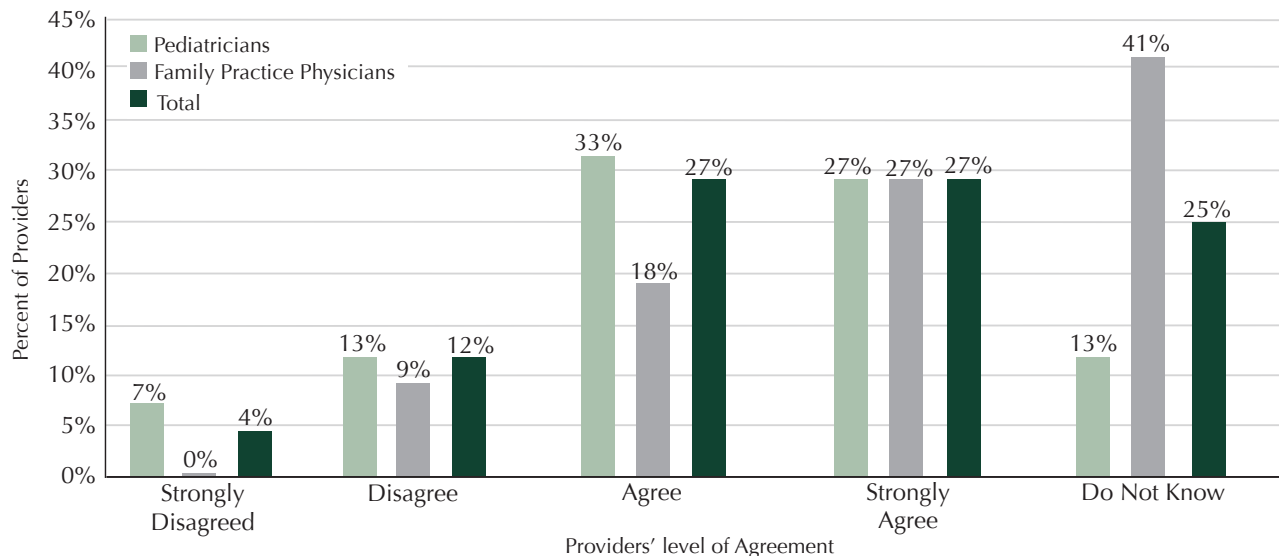


Figure 10. If Required in Well-Child Visit Checklist, Fluoride Varnish Would be Applied



Family practice physicians generally did not know if the varnish was quick and easy to apply, and this is likely the result of less training on how to apply fluoride varnish as well as less experience as noted in Figure 6 (82% worked in clinics where neither they, nor other staff, had applied fluoride varnish). Only 16% of all providers disagreed or strongly disagreed that varnish was quick and easy to apply while 60% of pediatricians either agreed or strongly agreed. Figure 11.

Figure 11. Fluoride Varnish is Quick and Easy to Apply



Though there was variability in the rate of fluoride varnish application, providers either agreed or strongly agreed that fluoride varnish was an effective preventative oral health care measure (90% of pediatricians and 82% of family practice physicians); no provider disagreed.

Training & Educational Materials

Providers were more generally unaware that fluoride varnish was a reimbursable service, and family practice physicians did not know if application was a quick and easy process. It is likely that rates of application and services billed are also low because providers were not knowledgeable on how to determine need for varnish application among pediatric patients. Only 44% of providers believed that they had the appropriate knowledge to determine the need for fluoride varnish among pediatric patients. Figure 12. Similarly, only 47% of providers believed that other pediatric health professionals within their clinical practice had the appropriate knowledge to determine the need for fluoride varnish among pediatric patients. Figure 13.

Figure 12. Provider has Appropriate Knowledge to Determine Varnish Need among Pediatric Patients

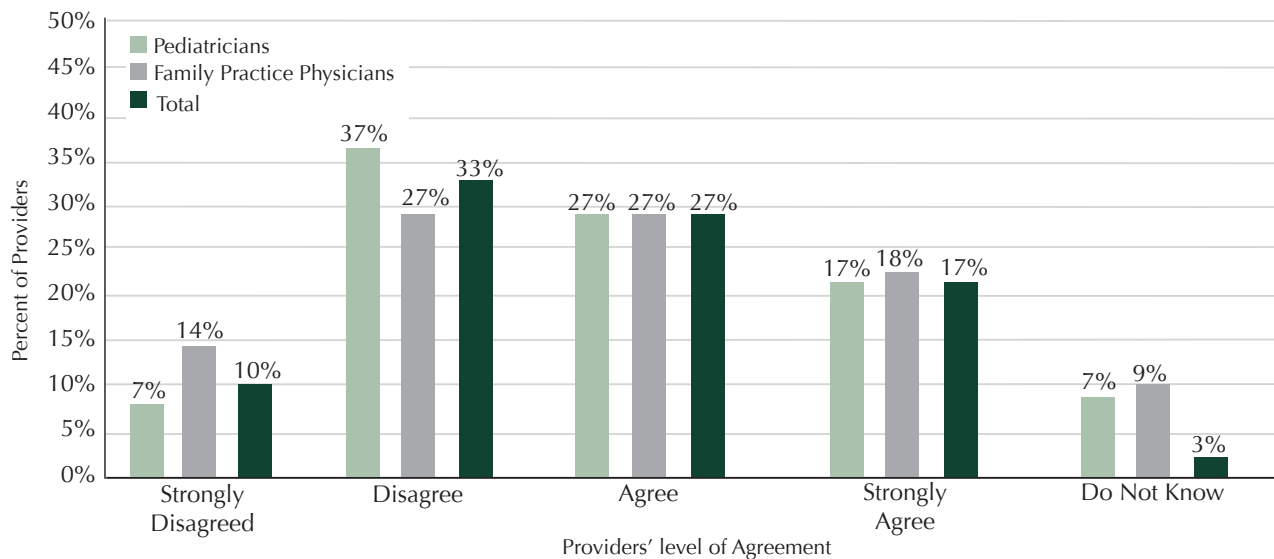
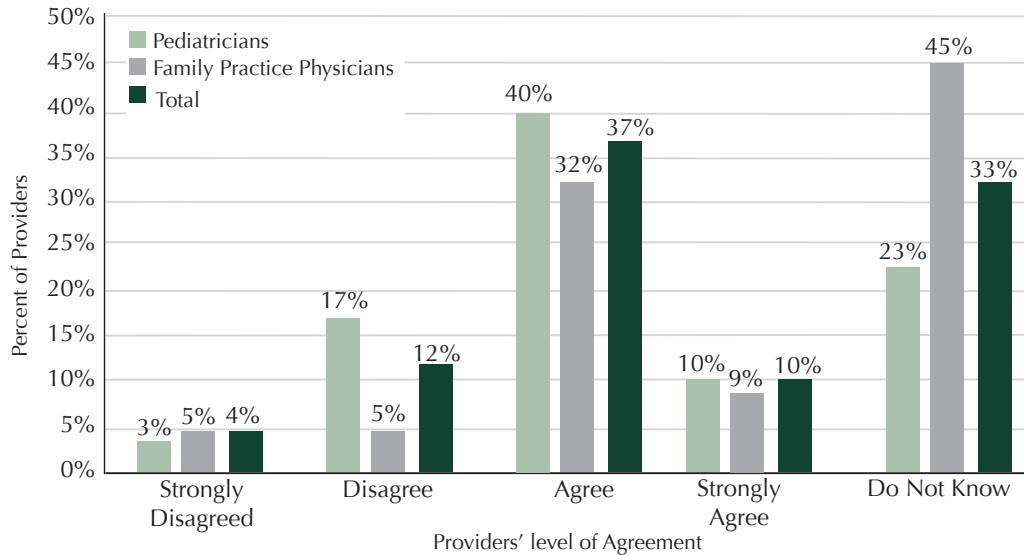


Figure 13. Other Providers within Same Clinic have Appropriate Knowledge to Determine Varnish Need among Pediatric Patients



Free trainings on oral health are available for all providers in North Dakota. Smiles for Life is a free, online oral health training curriculum promoted by the North Dakota Department of Health’s, Oral Health Program. Healthcare providers may take advantage of this training to develop knowledge about a variety of oral health care issues. The online training includes the following courses:

- Geriatric Oral Health
- Adult Oral Health
- The Oral Examination
- The Relationship of Oral to Systemic Health
- Child Oral Health
- Acute Dental Problems
- Oral Health and the Pregnant Patient
- Caries Risk Assessment, Fluoride Varnish and Counseling

The American Academy of Pediatrics also endorses the two child-focused modules of the Society for Teachers of Family Medicine Smiles for Life National Oral Health Curriculum, available online at www.smilesforlifeoralhealth.org. The information specific to North Dakota is available at www.ndhealth.gov/oralhealth/ndsmilesforlife.htm.

Roughly 37% of providers had heard of the Smiles for Life curriculum; just slightly more family practice physicians had heard of the training than pediatric providers. Figure 14. However, only eight (or 15% of the 33 respondents) had completed the training. Those who had taken the training had completed the following modules:

- Child Oral Health (6/8)
- Caries Risk Assessment, Fluoride Varnish and Counseling (5/8)
- The Relationship of Oral to Systemic Health (3/8)
- The Oral Examination (3/8)
- Acute Dental Problems (2/8)
- Adult Oral Health (1/8)
- Geriatric Oral Health (1/8)
- Oral Health and the Pregnant Patient (1/8)

Figure 14. Percent of Providers who had Heard of Smiles for Life Training

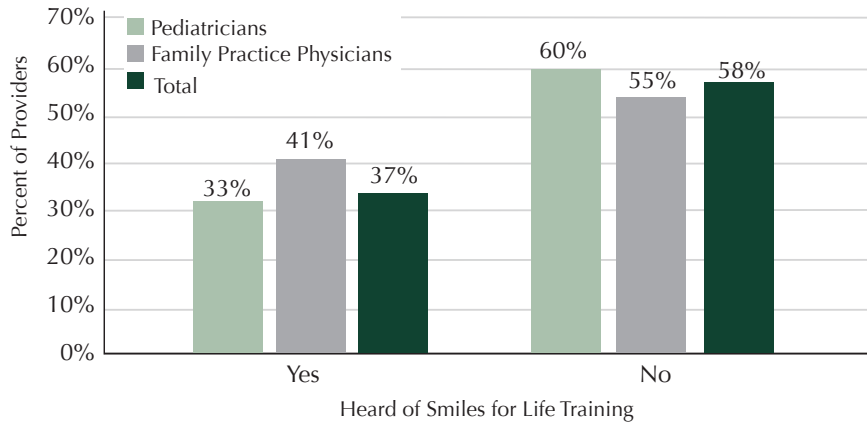
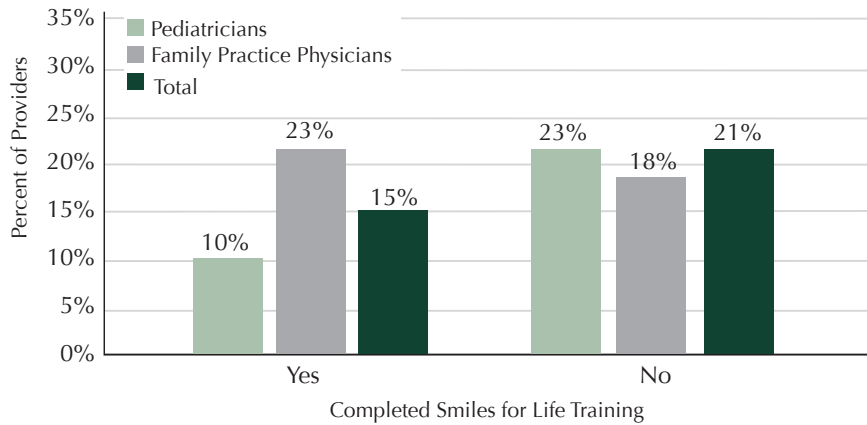


Figure 15. Percent of Providers who had Completed the Smiles for Life Training



Data illustrate that more training is needed among pediatric and family practice physicians, and that a majority believed that pediatric patients would benefit from fluoride varnish application. Parents must also be aware of the benefits of fluoride varnish and recognize the importance of pediatric oral health. A majority of providers believe that parents are unaware of the benefits of fluoride varnish (73%). Figure 16. A majority of the physicians’ clinics did not provide materials for parents regarding oral health or the benefits of varnish either. Only 23% of providers’ clinics provided informational flyers on oral health and 12% provided flyers regarding the benefits of fluoride varnish. Figures 17 and 18. While waiting rooms could provide an opportunity for parents and guardians to learn more about the benefits of preventative oral health services and application of fluoride varnish, only 53% of pediatricians and 68% of family practice providers were interested in free flyers for their offices. Figure 19. Roughly 40% of pediatricians stated they would not want free informational flyers on oral health or fluoride varnish.

Figure 16. Parents are Unaware of the Benefits of Fluoride Varnish

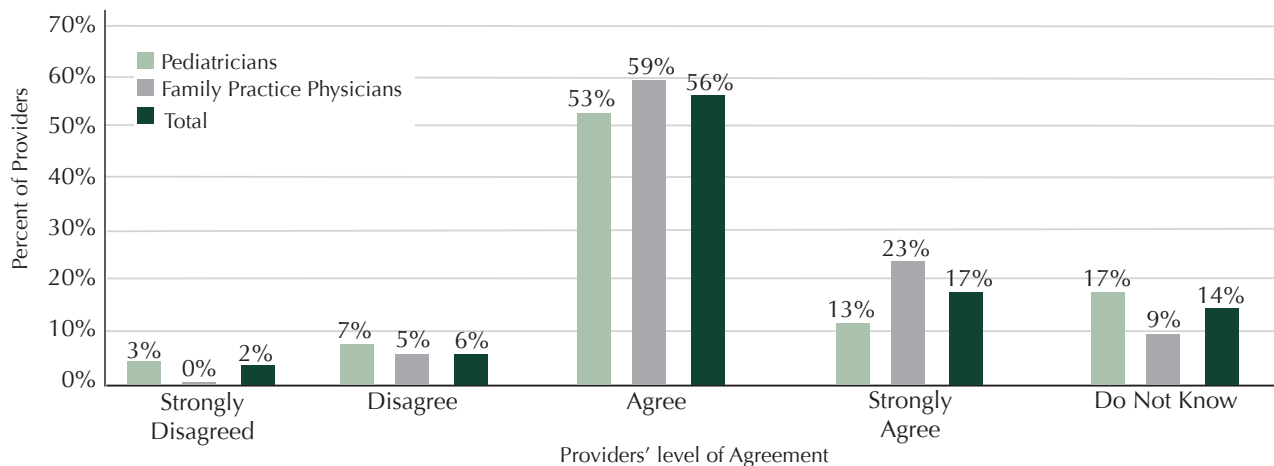


Figure 17. Percent of Providers' Offices with Informational Flyers Regarding Oral Health

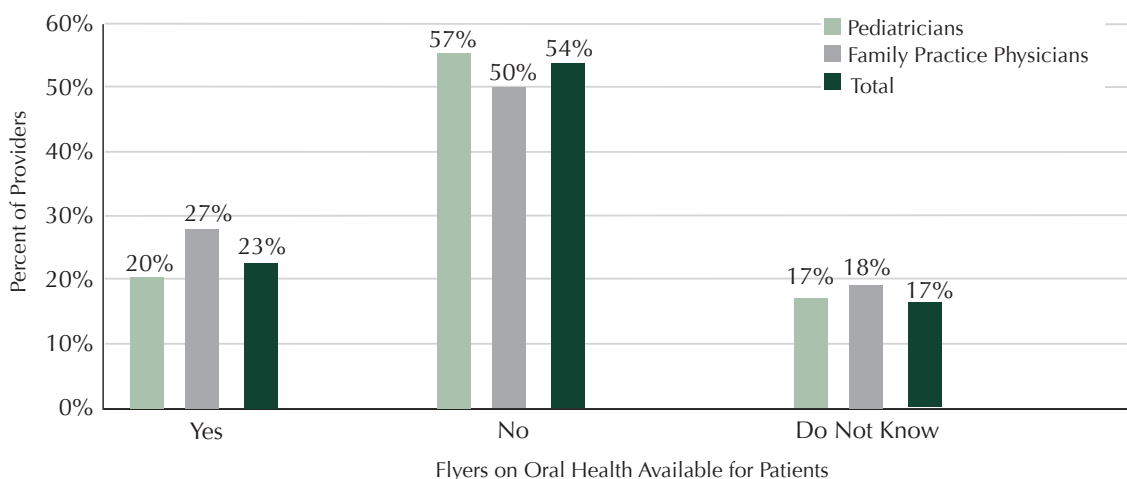


Figure 18. Percent of Providers' Offices with Informational Flyers Regarding Benefits of Fluoride Varnish

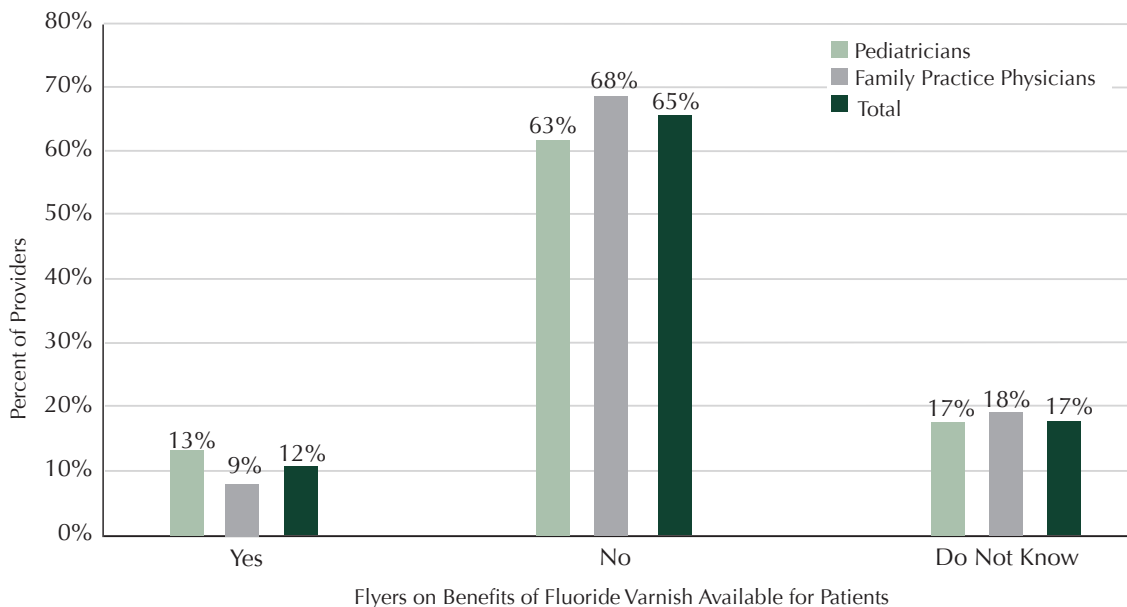
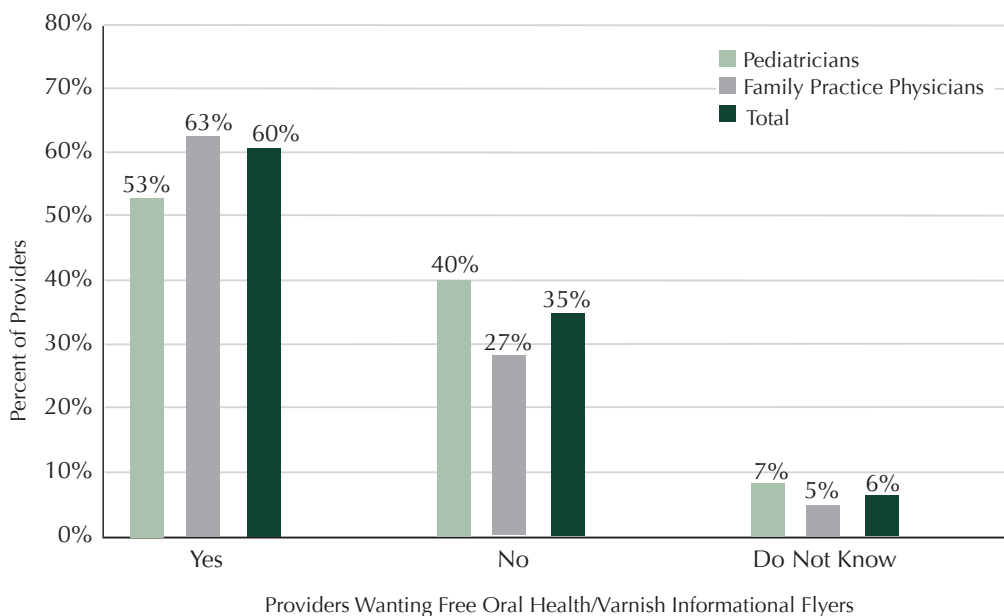


Figure 19. Percent of Providers Interested in Offering Free Oral Health Information to Patients/Families



Conclusion

Pediatricians and family practice physicians believed that the guardians of their patients were generally unaware of the benefits of fluoride varnish application. With an ill-informed patient population, still only 23% of all offices offered informational flyers on the importance of oral health and even fewer offered pamphlets (12%) on fluoride varnish. With guardians unaware of varnish and its benefits, it would be imperative for the provider to offer the fluoride varnish application, or have the care required as part of the well-child visit checklist. In North Dakota, it is not a requirement to apply fluoride varnish, even among at-risk children, and as a result, fewer than 10% of respondents had billed for fluoride varnish application in their clinic settings.

Children typically do not see a dentist until the age of two and a half, while the American Academy of Pediatric Dentistry recommends a visit by age one. Even by age one, children at high-risk of caries may have evidence of decay. Well-child primary care visits begin within the first weeks of birth and continue bi-weekly and monthly for the first six months of life, providing significant opportunity to address oral health and prevent potential decay among at-risk patients.

When asked why they were not providing fluoride varnish to pediatric patients, results indicated a lack of understanding on the importance of oral health for overall patient health. Physicians identified a lack of support from their clinic, no policy or protocol in place, and a general impression that this would be the responsibility of the local dental providers with some indicating that they did not “want to have any problems with turf.” Outside of the majority of respondents who indicated they would refer to a dentist to provide said care, or encourage a dental visit by age two (contrary to the recommendation of the American Academy of Pediatric Dentistry), the other identified barriers were training and time, with two others concerned about private insurance reimbursement and billing complications. What is evident is a need to address the importance of oral health for overall patient health, and to educate providers and guardians alike on the importance and benefits of fluoride varnish application, especially among at-risk patients.

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