

# Protect Tiny Teeth Implementation Project

*A pediatric oral health medical-dental integration  
quality improvement project*

# OVERVIEW & RESULTS

## Background

Cavities (dental caries) are one of the most common chronic diseases of childhood — affecting half of all children and disproportionately impacting low-income children and children of color. Children who develop caries early in life not only may experience acute pain and infection but also require restorations under general anesthesia and are at risk for chronic, lifelong poor oral health.

Infancy is when pediatricians see patients and their caregivers with the greatest frequency, and thus have regular opportunities to perform preventive oral health services. Despite the American Academy of Pediatric Dentistry (AAPD) recommendation for all children to have their first dental visit by age 1, in 2016, 80.2% of children aged 1 year had never seen a dentist. Although most pediatricians agree they should play a role in promoting oral health, many reported existing barriers in implementing oral health services such as inadequate time during visits, lack of payment for fluoride varnish application, and oral health risk assessment, inadequate training, and lack of dentists accepting young children in their practice.

To support pediatricians in the implementation of oral health services and establish routine preventive care in infancy, the American Academy of Pediatrics (AAP) created the Protect Tiny Teeth Toolkit ([www.aap.org/tinyteeth](http://www.aap.org/tinyteeth)). This kit includes communication and practice tools that can be used to educate health care professionals and families about oral health and to support integration of preventive oral health for pregnant patients and infants in medical settings.

## Focus Group Testing and Communications Messaging

To create the Protect Tiny Teeth tools, focus groups were conducted to inform the development of oral health messages for pregnant people and their children. Focus groups were held in communities that are historically under-resourced. Participants included people who were currently pregnant or recently had a child. The focus group participants reviewed drafted materials about prenatal and infant oral health. The goal was to find messages that were both attention-grabbing and resonated with the focus groups as behaviors they might be willing to learn about and change. The results guided the messages that are included in the Protect Tiny Teeth toolkit.

## Prenatal Care Settings Pilot Implementation Project 2020–2021

In 2018, a national environmental scan found that few programs, policies, and projects focused on oral health in the prenatal period. Recognizing this as a significant gap in improving children's oral health, the AAP implemented the Protect Tiny Teeth 9-month pilot project. Eight prenatal practice settings were selected to help inform ways to implement preventive oral health services into prenatal care. Results from the 2020–2021 project cycle are [available here](#). An implementation guide for prenatal and pediatric providers interested in implementing preventive oral health care services in primary care settings is [available here](#).

Using a similar format as the prenatal setting pilot project, the AAP planned another pilot project to implement Protect Tiny Teeth resources and

oral health services in pediatric primary care settings. From 2021–2022, this project was conducted in a learning collaborative format. Eight participating sites and faculty met virtually to discuss progress, successes, and challenges of implementation. This report outlines the results and lessons learned from this pediatric cycle and serves as a resource for other practices interested in medical-dental integration and pediatric oral health.

To learn more about the results of the prenatal quality improvement project, visit [www.aap.org/tinyteeth](http://www.aap.org/tinyteeth)



## 2021–2022 Protect Tiny Teeth Implementation Project Description

The AAP created an interdisciplinary project advisory committee (PAC) comprised of pediatric dentists, dental hygienists, pediatricians, OB/GYNs, and practice managers. This PAC served as subject matter experts to design the project and as speakers during learning sessions.

In October 2021, a request for applications was promoted through various listservs and networks. Over 20 applications were received, reviewed, and scored by PAC members. Eight pediatric sites from eight states were selected to participate.

A learning collaborative format with regularly scheduled virtual meetings provided quality improvement education and a venue for collaboration among sites. This program continued over the course of 7 months with one month to prepare to implement; five months to collect de-identified chart review data and report data; and one month to finish the project and participate in interviews. Learning

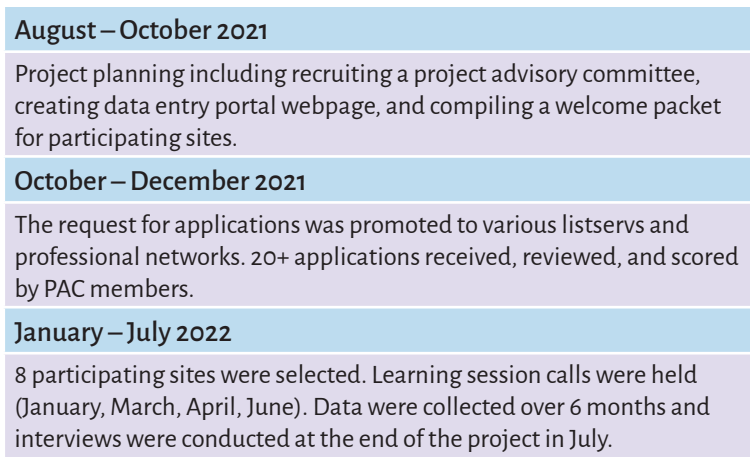
collaborative conference calls occurred approximately every other month.

Practice physician leaders and clinical staff completed two **Smiles for Life** online modules as baseline oral health training. This helped providers learn necessary skills in conducting caries risk assessments, applying fluoride varnish, and counseling on oral health in their medical practices. The project ran from January 2022 through July 31, 2022. Each site received oral health starter kits. The starter kits were small patient supply bags with children’s toothbrushes, fluoridated toothpaste, and printed educational handouts to distribute to patients and caregivers. Additionally, project physician leaders were eligible to earn 25 Maintenance of Certification (MOC) Part 4 points from the American Board of Pediatrics (ABP) for their participation in this project.

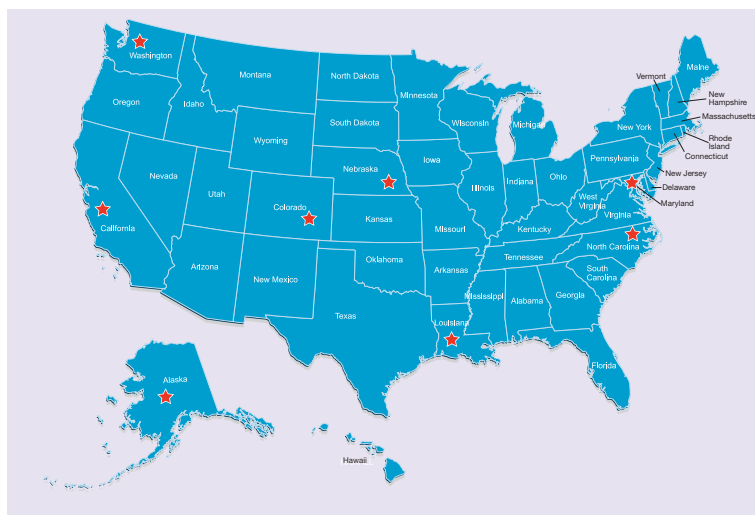
**Table 1. Participating Site Demographics – Protect Tiny Teeth Implementation Project (n=8)**

State	<ul style="list-style-type: none"> <li>Alaska</li> <li>California</li> <li>Colorado</li> <li>Louisiana</li> <li>Maryland</li> <li>Nebraska</li> <li>North Carolina</li> <li>Washington</li> </ul>
Setting	<ul style="list-style-type: none"> <li>3 FQHCs</li> <li>2 Medical Residency Program Clinics</li> <li>2 Private Practices (located in Health Professional Shortage Areas (HPSA))</li> <li>1 Complex Care Program</li> </ul>
Patient Languages	<ul style="list-style-type: none"> <li>Arabic (listed by 5 sites)</li> <li>Cambodian (listed by 2 sites)</li> <li>English (listed by all)</li> <li>French (listed by 1 site)</li> <li>Korean (listed by 2 sites)</li> <li>Spanish (listed by 7 sites)</li> <li>Taiwanese (listed by 1 site)</li> <li>Vietnamese (listed by 4 sites)</li> <li>Somali (listed by 2 sites)</li> </ul>
Estimated monthly prenatal visits	<ul style="list-style-type: none"> <li>2,730 (all sites)</li> <li>30–200 (5 sites)</li> <li>400–1200 (3 sites)</li> </ul>
Uninsured %	<ul style="list-style-type: none"> <li>0–7% (4 sites)</li> <li>23–33% (4 sites)</li> </ul>
Public insurance %	<ul style="list-style-type: none"> <li>9% (1 site)</li> <li>65–67% (4 sites)</li> <li>80–85% (3 sites)</li> </ul>
Starter Kits Delivered	<ul style="list-style-type: none"> <li>300 (1 site)</li> <li>500 (2 sites)</li> <li>700 (4 sites)</li> <li>900 (1 site)</li> </ul>
Other	3 sites have a co-located dental office

**Figure 1. Protect Tiny Teeth Implementation Project Timeline**



**Figure 2: Protect Tiny Teeth Implementation Project Participating Site Locations**



## Protect Tiny Teeth Implementation Project Aim

The overall aim was to increase oral health screening, parent/caregiver education, and referral to 90% of patients 6 months to 3 years of age. Additional project outcomes such as providing oral health education, referrals to a dentist, and visual exams of the mouth, applying fluoride varnish, assessing oral health risk, and utilization of Protect Tiny Teeth toolkit materials are outlined below. However, each practice was encouraged to create their own practice goals. Examples of practice-specific goals are below:

- Increase the number of patients reporting a dental home by 18 months of age by 30% by July 31, 2022
- Increase medical-to-dental referral by 40% above baseline by June 2022 for children seen for 12-month well child visits
- By June 2022, the clinic will distribute dental kits and counseling to >75% of pediatric patients by the 9-month well child visit



## Protect Tiny Teeth Implementation Project Outcomes

Run charts plot data over time to enable patterns to be recognized in quality improvement processes. For this project, practices entered de-identified patient chart information into a quality improvement data aggregator (QIDA) portal which creates run chart reports for each quality measure. Within the QIDA portal, participants were able to create individual practice reports and write annotations to document notes for each cycle that may have affected that cycle's performance. For example, a site

could note when there were significant staffing changes at the clinic.

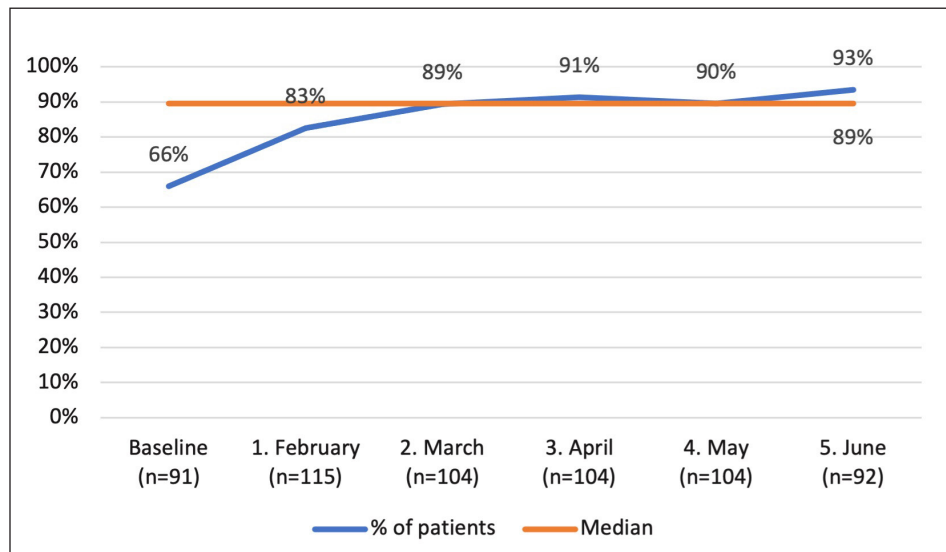
In order to include a median line, patient chart information was exported in Microsoft Excel to create the run charts below. Practices were required to submit at least 12 consecutive charts from the previous month for non-urgent, routine pediatric care for patients ages 6 months to 3 years of age. Some larger practices saw and entered data for more than 12 patients to include a larger percentage of their

patient population when analyzing practice-specific quality improvement. Therefore, the total number of charts varied slightly per month. One practice did not see 12 pediatric patients within the 6 month – 3 years age range throughout the project period and therefore, this practice's data were excluded in the aggregate run charts below. Baseline data were reported for January 2022, the month prior to beginning the quality improvement portion of the project.

### Overall Aim – Any Oral Health Aspect

At project baseline (January), aggregate data across all sites showed that nearly 66% of pediatric patients ages 6 months – 3 years of age and/or their parents/caregivers had received any oral health education, referral, or screening as compared to 93% at Cycle 5 (see figure 3). This increase of 27% surpassed the original goal of 90% of patients receiving any oral health services.

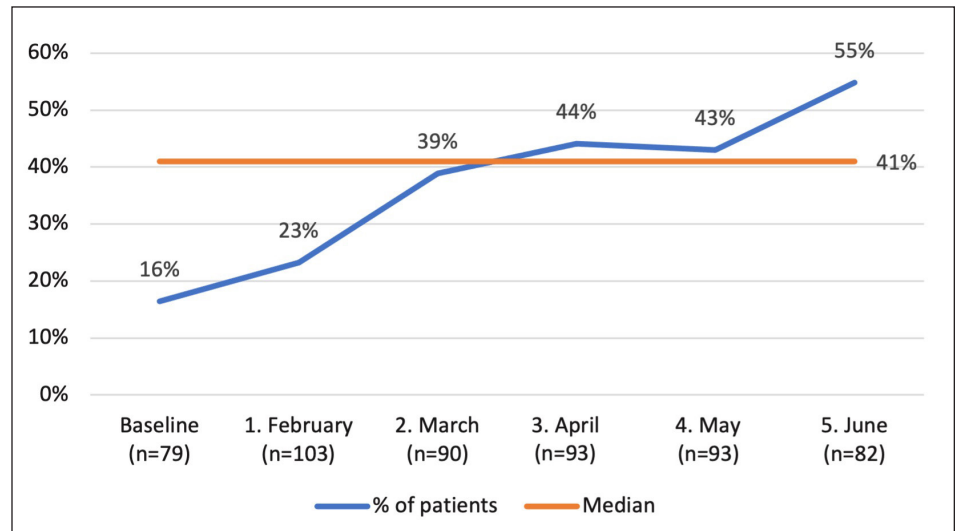
Figure 3. Any Oral Health Aspect



## Fluoride Varnish Application

The 2022 AAP Recommendations for Preventive Pediatric Health Care – **Peri ty Schedule** includes the United States Preventive Services Task Force (USPSTF) updated recommendation that primary care clinicians apply fluoride varnish to the primary teeth of all infants and children starting at the age of primary tooth eruption, every 3 to 6 months in the primary care or dental office based on caries risk up to age 5. Since children are eligible for fluoride varnish upon tooth eruption, the project population included patients from the age of 6 months. For additional accuracy, the data collection tool identified patients who did not receive fluoride varnish because they had received it within the previous 3 months. At project baseline, only 16% of patients received fluoride varnish at their well child visits. By the end of the project cycle, 55% of patients received fluoride varnish (see figure 4). In 2008,

Figure 4. Fluoride Varnish Application



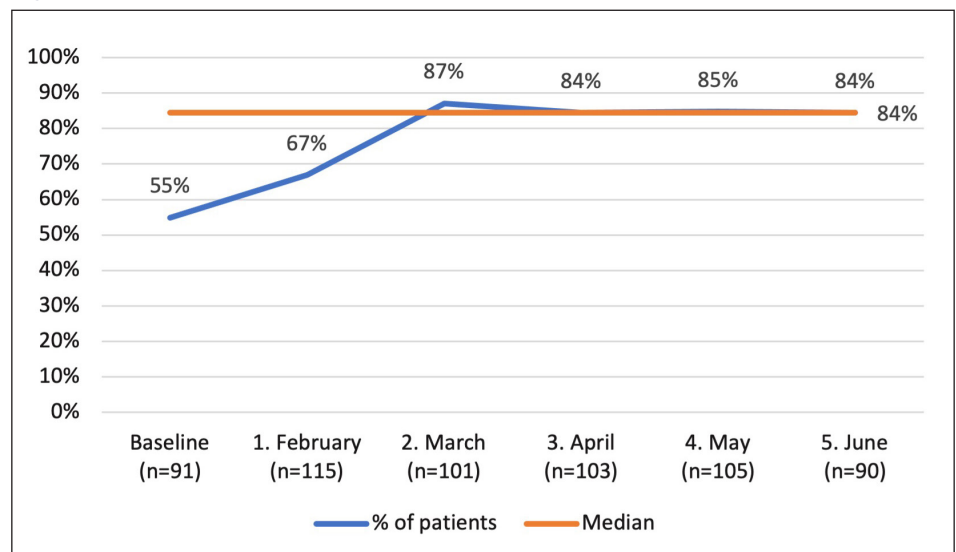
only 3% of pediatricians responding to the AAP Periodic Survey reported applying fluoride varnish, increasing to 19% in 2018. Although there has been a significant increase since 2008, the results of this measure in the Protect Tiny Teeth implementation project suggest that continued

support and guidance on integrating fluoride varnish into the well-child visit workflow can help pediatricians sustain this preventive service in practice.

## Visual Exam of the Mouth

At baseline, 55% of patients received a visual exam of the mouth to screen for oral health issues. At Cycle 2, the percentage of patients receiving a visual exam of the mouth reached 87% and leveled to 84%, 85%, and 84% at Cycles 3, 4, and 5 respectively (see figure 5).

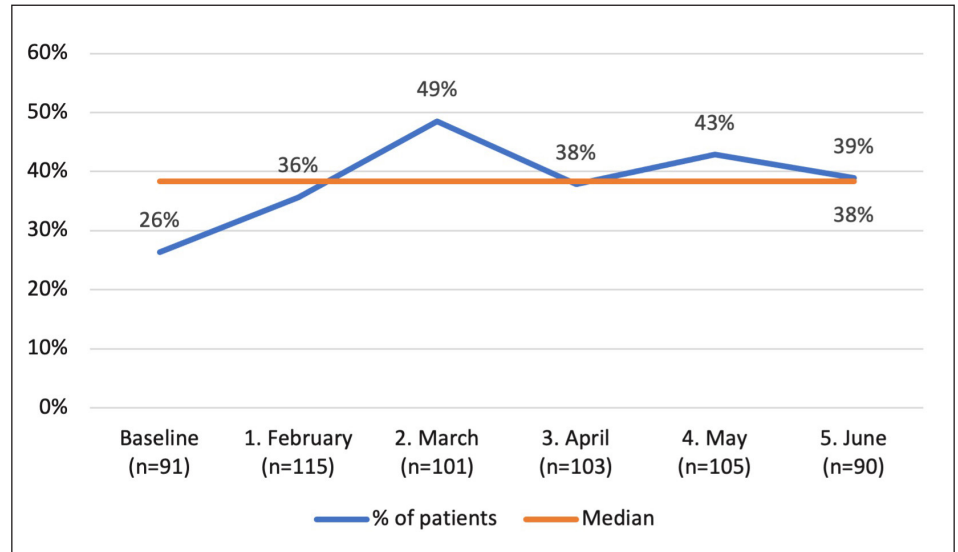
Figure 5. Visual Exam of the Mouth



## Dental Home Status

At baseline, 26% of patients had a dental home recorded in their patient chart. This measure peaked at 49% in Cycle 2 and ended at 39% in Cycle 5. While the final cycle measure was much lower than the goal of 90% of patients having a dental home, this will likely increase over time as the practice continues to make dental referrals a consistent aspect of the workflow (see figure 6).

Figure 6. Dental Home Status



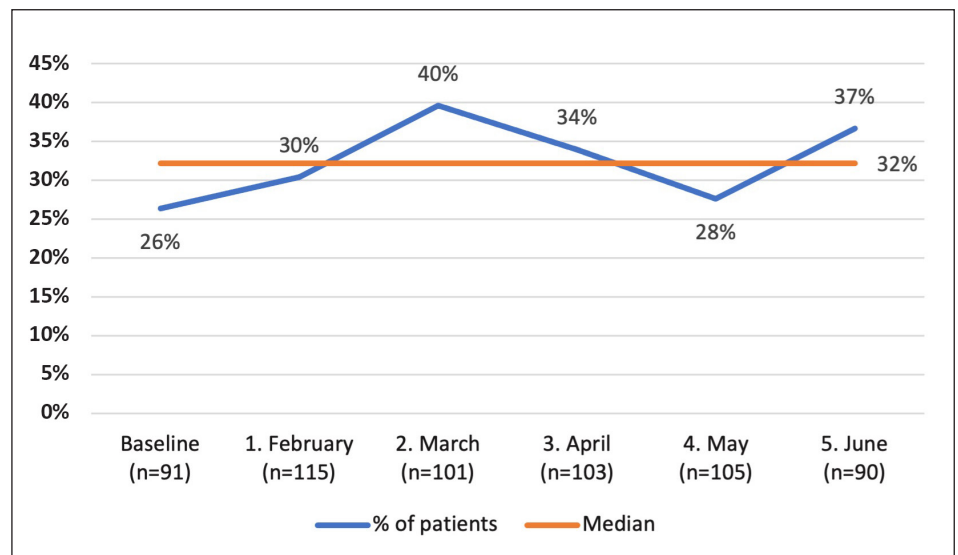
## Dental Referrals

At project baseline, only 26% of patients received referrals to a dental office. The data collection tool for this measure was updated after the baseline data cycle to better reflect why a dental referral may not have been recorded. The updated answer choices in the data collection tool were: 1) yes; 2) no, patient has a dental home; 3) no. This way, if a referral was not completed because the patient has a confirmed dental home it does not reflect on the practice as a gap in care during data analysis. At Cycle 5, 37% of patients received a dental referral (see figure 7). Another key goal of this implementation project was to promote collaboration among dental and medical professionals. As part of the project, participating sites were required to connect with local dental professionals and discuss how they can support each other in improving children’s oral health in their communities. Some practices that had co-located dental clinics held regular meetings to discuss current

referral processes and adjustments to streamline a “closed-loop” referral process. For those without co-located dental clinics, many sites called as many dental providers in the community as possible to provide updated information including which insurances are accepted, hours of operation,

and contact information when recommending caregivers establish a dental home for the patient.

Figure 7. Dental Referrals



## Protect Tiny Teeth Toolkit Overview and Testing

Resources for patients, prenatal providers, and pediatric and family physicians are available at [www.aap.org/tinyteeth](http://www.aap.org/tinyteeth).

### Patient Outreach Focused Resources (Available in Multiple Languages):

#### Short Videos

- The Art of For-Two'ing (prenatal oral health)
- Tiny Teeth Beneath the Gums (infant oral health)

#### Posters

- Now You're Brushing for Two
- Pregnant? Schedule Your Dental Visit Today
- Protect Tiny Teeth

#### Infographics

- Prenatal Oral Health Infographic
- Dental Care During Pregnancy
- Infant Oral Health Information

#### Brochure

- Questions Parents Are Asking About Oral Health

#### Goal Sheet

- Self-Management Goal Sheet for Parents and Caregivers

### Prenatal Clinical Practice Focused Resources:

#### Workflow

- Example workflow to add Preventive Oral Health Care into Clinical Practice

#### Clinical Practice Forms

- Prenatal Oral Health Information Form and Corresponding Conversation Guide
- Prenatal Oral Health Screening
- Prenatal Medical-to-Dental Referral Form

### Pediatric Clinical Practice Focused Resources:

#### Clinical Practice Forms

- Oral Health Risk Assessment Form
- Pediatric Medical-to-Dental Referral Form
- Brush, Book, Bed Resource Guide



Download free copies of these resources in multiple languages including English, Spanish, Arabic, Cambodian, French, Korean, Russian, Taiwanese, and Vietnamese. Some resources can be customized with your organization's logo at [aap.org/tinyteeth](http://aap.org/tinyteeth)

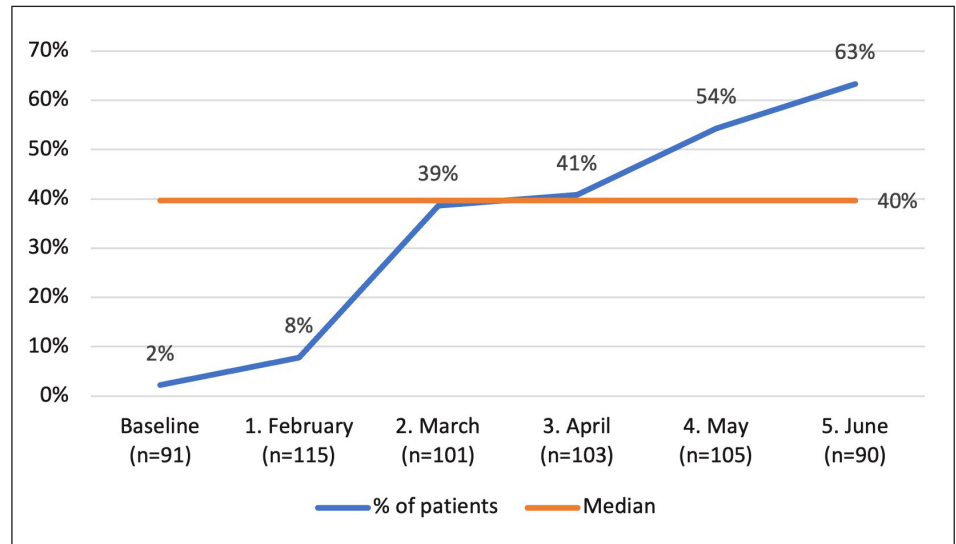


# Five tools were tested during the pediatric Protect Tiny Teeth Implementation Project cycle, although only two were documented in the data collection tool. The next four pages describe each tool and how they were adapted by the sites.

## 1. Oral Health Risk Assessment Tool

The AAP has developed a tool to aid in the implementation of oral health risk assessment during health supervision visits. The tool was reviewed and endorsed by the National Interprofessional Initiative on Oral Health. At baseline, only 2% of patients were screened using the Oral Health Risk Assessment Tool. However, the percentages of patients screened with the tool increased steadily over each cycle up to 63% at Cycle 5 (see figure 9).

Figure 8. Oral Health Risk Assessment Tool Use



To be easily accessible, some practices printed and laminated this tool to keep within each patient exam room. One pediatrician stated that she also showed the images

of signs of decay while counseling parents and caregivers on prevention techniques. Some participants shared tips during learning sessions on embedding the risk assessment tool within the EHR to document the patient caries risk level. However, some practice teams also stated that most of their patient population falls within the high-risk category and decided to forgo

the use of the tool and assume every patient is high risk. This reduced time spent on assessment and made treatment clear for all patients. The tool outlines the treatment plan for high-risk children including the professional application of fluoride varnish, counseling on the importance of teeth brushing twice daily with an age-appropriate amount of fluoridated toothpaste, and referral to a pediatric dentist or dentist comfortable caring for children.



Download free copies of the **Oral Health Risk Assessment Tool** in English or Spanish at [aap.org/tinyteeth](http://aap.org/tinyteeth)

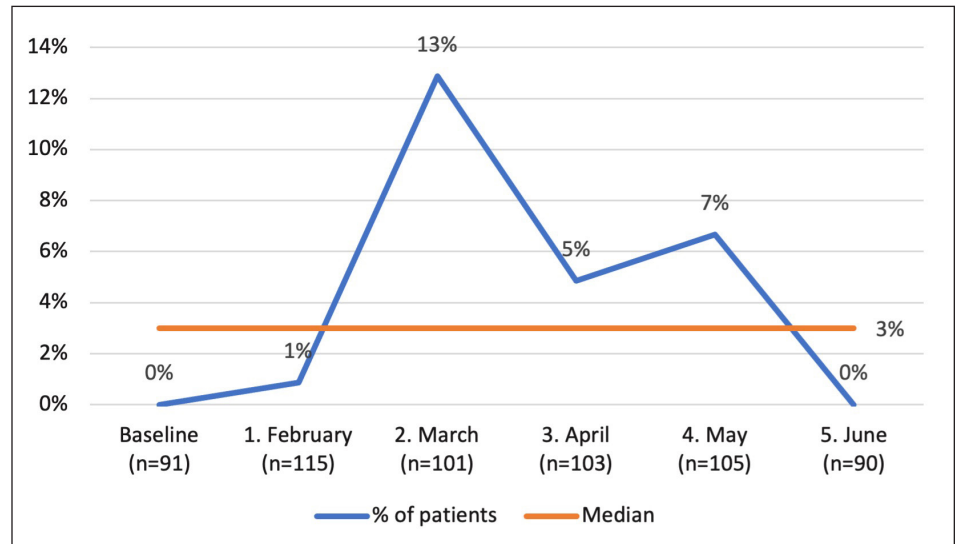


## 2. Medical-Dental Referral Form

As part of the **Protect Tiny Teeth toolkit**, the Medical-Dental Referral form was created to help medical providers connect patients with a dental home while including information about the patient’s oral health such as oral exam findings, fluoride varnish application history, and other risk factors. Since the toolkit was introduced to practices at the beginning of this project, at baseline 0% of patients were referred using this form and use continued to fluctuate throughout the five data cycles. At the peak usage, 14% of patients were referred using the form, however, at Cycle 5 it was back to 0%.

While discussing the fluctuation of this measure during learning sessions, sites shared that they had existing referral processes established, many using electronic health records (EHR).

**Figure 9. Medical-to-Dental Referral Form Use**



However, some sites stated that they used portions of the form as a reference in building their electronic referral process at their practice rather than a printed and faxed paper referral (see figure 9).

**Pediatric medical-to-dental care referral form**

**Patient Information**  
 Patient Name: \_\_\_\_\_ DOB: \_\_\_\_/\_\_\_\_/\_\_\_\_  
 Parent/Guardian: \_\_\_\_\_ Height: \_\_\_\_\_  
 Telephone: \_\_\_\_\_ Weight: \_\_\_\_\_

**Medical Professional Information**  
 Pediatric Care Professional: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
 Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Signature: \_\_\_\_\_

**Follow-Up Request**  
 This patient is being referred for a dental evaluation and care in a dental home. If this patient requires sedated care, please contact our office to discuss next steps. Until this child can be seen regularly by a dental professional, our office will provide periodic oral health screenings, oral hygiene guidance, and fluoride varnish/supplementation as needed. Please indicate if this child was seen in your office by faxing our office a short note with information regarding the visit and a follow-up plan. Thank you.

**Referral Information for Dental Professional**  
 Reason for Referral:  Immediate care needed  Abnormal oral screening  Routine dental care  
 Other, please describe \_\_\_\_\_  
 Concerns: \_\_\_\_\_  
 Describe conditions that could affect their receipt of routine or restorative dental care that could require anesthesia: \_\_\_\_\_  
 Known Allergies: \_\_\_\_\_

(Continued on back)

Download free copies of the **Medical-Dental Referral form** in English or Spanish at [aap.org/tinyteeth](http://aap.org/tinyteeth)



## Parent & Caregiver Anticipatory Guidance Tools

Participating sites were encouraged to utilize three parent/caregiver-focused outreach resources throughout this implementation project. At the beginning of the project, sites were mailed printed handouts in languages requested with the shipment of oral health starter kits (children's toothbrushes, fluoridated toothpaste, and patient supply bags). Many sites chose to package the handouts with the oral health supplies to provide a "visual reminder" at home while also discussing the material with the parents and caregivers during the visits.



During qualitative interviews at the end of the project, participants were given the opportunity to provide additional feedback on the materials. Some of the suggestions are included below.



### 3. Infant Oral Health Infographic

This resource was one of the most popular tools during the implementation project. Providers stated that it clearly outlined the recommendations for parents and caregivers to consider as they form healthy oral health habits in the first year of life. Additionally, it was noted that the minimal text and use of images was favorable when discussing with parents and caregivers.



#### 4. Questions moms are asking about oral health

This resource was also favorable in terms of the content and design as a concise, “Q&A” format. However, participants cited concerns regarding the use of the term “mom” and its limiting of the resource’s potential audience. Many parents and caregivers concerned with children’s oral health may not identify with the term “mom” or some of the pregnancy-related information in the brochure when visiting a pediatric office with their infant. Therefore, this resource is best utilized in prenatal care settings. This tool was one of the most popular tools among prenatal care settings participating in the 2020-2021 quality improvement project cycle. More results from the quality improvement project cycle in prenatal settings is [available here](#).



**Brush, Book, Bed:**  
A Routine to Structure Your Child's Bedtime.

Kids love routines! **Brush, Book, Bed** combines 3 important activities into a fun and easy nighttime routine: brush teeth, read a book, and go to bed.

**Brush**  
Each night, here's how you can help your children **brush their teeth**.

- Before teeth come in, use a **soft washcloth to wipe your baby's gums** after each feeding and before bed.
- **Once even just one tooth appears, brush two times a day** with fluoride toothpaste.
  - ✓ **Under age 3:** toothpaste about the size of a grain of rice.
  - ✓ **Ages 3-6:** toothpaste about the size of a small pea.
- It's okay to let your child practice brushing, but they need your help to do the best job!

**Book**  
After you have helped your children brush their teeth, **it's time to read!**

- It's okay to **let your child pick the books to read**.
- **Children love to hear your voice.** Act out the story using your voice, hands, and face.
- **Point out and name pictures in the books you read.** Ask questions as you read. "Where's the puppy?" "What color is the ball?"

**Bed**  
After brushing teeth and reading together, **it's time to go to bed!**

- **Make daytime playtime.** Play and exercise during the day will help your children sleep at night.
- Put your children to bed when drowsy but still awake so they learn how to **fall asleep on their own**.
- To prevent tooth decay, **avoid putting babies in bed with a bottle of milk or juice.**
- The safest way for babies to sleep is **on their backs**, in their own crib, **without soft objects like blankets, pillows, or stuffed animals.**

Do your best to start your routine every night at the same time, 30 minutes before bedtime, so that you have enough time to brush teeth, read together, and go to sleep.

For more tips on what to include in this bedtime routine, visit [www.HealthyChildren.org/BrushBookBed](http://www.HealthyChildren.org/BrushBookBed).

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be medication or treatment that your pediatrician may recommend based on individual facts and circumstances. The publication has been developed by the American Academy of Pediatrics. The authors and contributors are not responsible for the field of publication. No commercial endorsement of any kind has been included or accepted in the development of this publication. Copyright © 2021 American Academy of Pediatrics. This may be printed or reproduced for personal use only. No reproduction or use for commercial purposes. All rights reserved. The American Academy of Pediatrics. The names and photographs are identified in this publication are trademarks. They have no relation to the issues discussed. Any characters they are performing are fictional. This pamphlet is supported by the Center for Cooperative Agreement Number 2019C00000020001-010, funded by the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC or the Department of Health and Human Services.

healthychildren.org | American Academy of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN

#### 5. Brush, Book, Bed Caregiver Handout

This caregiver handout was originally created as part of the popular Brush, Book, Bed Program to help parents develop healthy nighttime routines. This handout was included as a resource for this project cycle to provide information for the patient population beyond age 1. Participating sites shared that the information included in the handout was very helpful for caregivers by providing an overview of the AAP oral health, early literacy, and safe sleep recommendations. However, some participants stated that the resource is “text-heavy” and could be updated with more icons and images.

With the popularity of this content during this implementation project and the Brush, Book, Bed Program, the AAP will refresh the handout and other program materials for an updated, streamlined design.

Download free copies of these tools and many more in English or Spanish at [aap.org/tinyteeth](http://aap.org/tinyteeth)

## Conclusion

Although this quality improvement project was conducted over a limited time frame of 7 months, practices were able to take initial steps to implement preventive oral health services in pediatric primary care settings. The overall goal for 90% of patients ages 6 months – 3 years of age to receive any oral health preventive services during a well-child visit was surpassed, reaching 93% of patients at the final data cycle in June 2022. During interviews with participants many stated that they felt more confident in providing services, especially fluoride varnish, in the medical setting. Sites plan to continue to incorporate oral health services into their workflows, collaborate with dental providers in the community, and utilize the Protect Tiny Teeth resources.



*“I have always discussed oral health during visits, but the biggest change from this project was starting to apply fluoride varnish. I have less fear around it and have added it into the clinical workflow for all visits, not only well-child visits, and apply it when appropriate.”*

*– Pediatrician in a health professional shortage area (HPSA)*

## Acknowledgments

*The AAP appreciates the participation of the Project Advisory Committee and the prenatal and pediatric practice sites. This project was supported by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling \$150,000 with 100 percent funded by CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by American Academy of Pediatrics, CDC/HHS, or the U.S. Government.*