



Dental Public Health Project Descriptive Report Form

Please provide a description of your organization’s successful dental public health project by completing this form. Add extra lines to the form as needed but stay within **word limits**.

Please return the completed form to Lori Cofano: locofano@astdd.org

| Name of Project | | | | | | |
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| Pediatric Program within Apple Tree Dental | | | | | | |
| Executive Summary (250-word limit) | | | | | | |
| <p>This Pediatric Program within Apple Tree Dental embeds specialty care for children within a non-profit critical access dental provider organization. Utilization of a clinical team with a tiered skillset, intentional training and development of all levels of our care team through pediatric-focused continuing education and using telehealth technologies to triage new and referred patients supports positive and more efficient in-person dental visits. Understanding and eliminating barriers to accessing care, providing whole-family care coordination, utilizing tailored treatment approaches including minimally invasive treatment, and proactive caries prevention are integral components of this effective program and its successful management of oral disease among publicly insured and/or medically and behaviorally complex children.</p> <p>The goal of this program is to decrease care intensity and cost for those requiring advanced services and shift the emphasis from surgical treatment to minimally invasive care and disease prevention.</p> | | | | | | |
| Name of Program or Organization Submitting Project | | | | | | |
| Apple Tree Dental | | | | | | |
| <p><i>Essential Public Health Services to Promote Health and Oral Health in the United States</i></p> <p>Place an “X” in the box next to the Core Public Health Function(s) that apply to the project.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px; text-align: center;"><input type="checkbox"/></td> <td>Assessment</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Policy development</td> </tr> <tr> <td style="text-align: center;">x</td> <td>Assurance</td> </tr> </table> <p>http://www.astdd.org/state-guidelines/</p> | <input type="checkbox"/> | Assessment | <input type="checkbox"/> | Policy development | x | Assurance |
| <input type="checkbox"/> | Assessment | | | | | |
| <input type="checkbox"/> | Policy development | | | | | |
| x | Assurance | | | | | |

Project submissions will be categorized by the Core Public Health Functions on the ASTDD website.

Healthy People 2030 Objectives

List Healthy People 2030 objectives related to the project.

- AHS-05 Reduce the proportion of people who can't get the dental care they need when they need it
- OH-01 Reduce the proportion of children and adolescents with lifetime tooth decay experience in their primary or permanent teeth
- OH-02 Reduce proportion children and adolescents active and untreated tooth decay
- OH-08 Increase use of the oral health care system
- OH-09 Increase the proportion of low-income youth who have a preventive dental visit
- OH-10 Increase the proportion of children and adolescents who have dental sealants on 1 or more molars

This information will be used as a data resource for ASTDD purposes.

Keywords for sorting the project by topic.

Provide **three to five** keywords (e.g., access to care, children, coalitions, dental sealants, fluoride, policy, Medicaid, older adults, pregnant women, etc.) that describe the project. Keywords are used to categorize submissions.

Detailed Project Description

Project Overview

(750-word limit)

1. What problem does the project address? How was the problem identified?

In Minnesota, as in most states across the nation, publicly insured children and families experience higher disease burdens and lower access to care. Fewer than half of children in Minnesota Health Care Programs (MHCP is Medicaid-funded insurance) had even one dental visit in the 3 years prior to the pandemic. Very young children and those with special health care needs often require the advanced skills of a specialist to receive dental treatment. Referrals to pediatric dentists exceed the available capacity.

2. Who is the target population?

Apple Tree Dental created its pediatric program to address longstanding barriers that underlie oral health disparities. Pandemic-related disruptions accelerated growth and innovation within the pediatric program and expansion of telehealth already in use at Apple Tree. Motivational-interviewing, minimally invasive techniques, and intentional skill-building of individual staff members accelerated, strengthening the pediatric team as a whole.

3. Provide relevant background information.

As background, Apple Tree Dental's mission is to overcome barriers to oral health. Our vision is to foster partnerships that create healthy communities. Since its founding in 1985, Apple Tree has grown in response to community need. Today, Apple Tree's 10 Centers for Dental Health and a nationally recognized mobile dental program use a "Community Collaborative Practice" model of care called to serve low-income, underinsured, and uninsured patients and those insured by MHCP. In partnership with 150 community organizations, dental care is delivered to Head Start and school-age children, children with special health care needs such intellectual and developmental disabilities, and other population groups not reached by the traditional delivery model.

The American Academy of Pediatric Dentistry defines the Dental Home as the "ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care, delivered in a comprehensive, continuously accessible, coordinated, and family-centered way." Apple Tree's pediatric program, led by Dr. Nathaniel Cook, aims to create lifelong dental homes. Currently, the team is comprised of Dr. Cook, a second pediatric dentist, an advanced dental therapist/dental hygienist, a dental hygienist, four dental assistants, and pediatric care coordinators who support patients, their families, and clinical providers. The team has developed a pediatric-specific policy and procedure manual, which includes desired qualities and expectations of team members. Their goal is to deliver highest-quality, patient-centered care and to be sensitive to the experiences and circumstances of their patients, whether related to age, income, racism, trauma, or other social determinants of health.

Through an agreement with Hennepin Healthcare hospital system, a Level I Adult and Pediatric Trauma Center, two pediatric dentists are credentialed and appointed as part-time faculty. Patients who require treatment in a hospital setting may have their care transferred to the hospital while maintaining continuity with Apple Tree Dental.

Patients are referred to the pediatric program by Apple Tree providers and by safety-net and private practices across the state. Referrals are triaged, beginning with a virtual initial visit using the MouthWatch Teledent platform and a detailed questionnaire note template (Appendix A) structured to understand families' concerns and goals. At this stage, barriers such as language or transportation can be identified and resolved, which allows the first in-person visit to be more successful and productive. As appropriate, appointments are scheduled either with the pediatric specialist or with a non-specialist Apple Tree provider identified as able to meet their needs. When an emergency dental need is not present, the first focus is on understanding the patient, the family's expectations, their motivations and concerns, and reviewing any complex medical and dental histories including the child's behavior and abilities. The process includes caries risk assessment, palliative advice, and helping the child feel comfortable, which are integral to determining the specific treatment approach. Emergent needs are addressed, and treatment is sequenced to support a positive experience. Depending upon the extent of the patients' needs, Silver Diamine Fluoride (SDF) may be applied, sedation consult/options presented, consent reviewed, and pre-operative directions provided.

According to the child's dental needs, ability to tolerate care in the office, and medical complexity, the treatment may be provided in-office by a general dentist, dental therapist, or a pediatric dentist specialist. Comprehensive care is available at Apple Tree using approaches to stabilize and stop the tooth disease process, and restore damaged teeth. Minimally invasive treatments are used for definitive care and to stabilize a patient until additional restorative treatment can be provided. If the child requires it, the pediatric specialist can offer mild or moderate conscious sedation. If general anesthesia is necessary to complete treatment safely and compassionately, Apple Tree's pediatric program offers this service in our state-of-the-art surgical suite in collaboration with a certified pediatric anesthesiologist. For children who require treatment in a hospital setting due to the child's medical complexity, our pediatric specialists

assist the care transfer process and complete the child's treatment at a local, affiliated hospital. For children who require advanced treatment under sedation or general anesthesia, we emphasize the treatment of the disease is only the first step in improving their oral health, and follow-up care, consistent with the dental home model of care, is critical for further disease prevention.

4. Describe the project goals.

After urgent and restorative treatment needs are addressed, more frequent and intentional follow-up places the focus on disease prevention and addressing the underlying controllable factors that contribute to severe dental disease. These visits focus on motivational interviewing to determine a tailored approach, and an emphasis on oral hygiene, dietary counseling, and establishing positive dental care experiences.

Each of these steps helps improve the patient experience and maximize team efficiency—making in-person visits as positive and productive as possible—all while reducing the cost and intensity of care for children treated in the program over time.

Resources, Data, Impact, and Outcomes

(750-word limit)

1. What resources were/are necessary to support the project (e.g., staffing, volunteers, funding, partnerships, collaborations with other agencies or organizations)?

Several key resources have supported the Pediatric Program within this program. Recruiting staff with pediatric dental specialty expertise has enabled learning about the latest standards of care for children across the organization through our internal continuing education programs as well as a co-located Advanced Education in General Dentistry (AEGD) residency program. An organizational culture of respect and collaboration has empowered each member of the staff to apply these learnings within their full scope of practice. An emphasis on minimally invasive clinical techniques, empathy with an understanding of the social determinants of health for families served, and high standards of intake and record-keeping create an infrastructure for smooth transitions between the pediatric specialty team and the wider organization.

2. (a) What process measure data are being collected (e.g., sealants placed, people hired, etc.)?

Electronic dental records within OpenDental allow tracking of oral conditions, care coordination, and treatments completed by each member of the clinical team across outpatient, hospital, and community-based mobile care settings. Directors of Information Systems and Research link electronic dental records as well as human resources data reflecting staff inputs to practice management software and data visualization software to support quality improvement and [research projects](#). One example is the use of a custom code to track integration of a novel caries-arresting product with ease of exporting observational notes to evaluate effectiveness. In addition to tracking custom dental diagnosis codes and treatment codes, the organization is piloting inclusion of patient-reported outcomes using the Oral Health Impact Profile (OHIP-5) as well as radiograph annotations from artificial intelligence software. Additionally, a practice management

software called Practice by Numbers allows us to manage and assess practice functions and streamline patient communication.

(b) What outcome measure data are being collected (e.g., improvement in health)?

With our Pediatric Team emphasis on minimally invasive treatment and caries prevention, members throughout the organization are actively shifting their approach from surgical to therapeutic. For example, a member of the pediatrics team notes data shows a shift between 2017 to 2022 during which she provided more applications of therapeutic Silver Diamine Fluoride than restorations (fillings).

Despite our intention, many children still require advanced restorative and surgical treatment. Because of the additional training and expertise in working with children and their families, our pediatric specialists are able to provide these services in our clinic setting without resorting to sedation or general anesthesia for the majority of our child patients. For those who do require more advanced services, Apple Tree's pediatric specialists are able to provide treatment under general anesthesia (GA) in collaboration with a contracted pediatric anesthesiologist at its Mounds View Center. When delivered in this clinic setting, the costs to the system are significantly less than if provided in a hospital operating room and the wait time is less. In addition, families consistently report improved ease of access in receiving care in our clinic setting relative to the more complicated urban hospital setting. Since 2019, 397 such cases have been completed at Apple Tree, with the numbers increasing significantly each year. For patients requiring GA, contributory determinants, such as systemic comorbidities, family system factors, and other social determinants of health are closely tracked to better understand the population of patients requiring these intensive services, with hopes to improve prevention of redevelopment of severe dental disease and recurrent need for these services.

(c) How frequently are data collected?

3. How are the results shared?

Reports and findings about the program are shared with staff, the Board of the organization, local communities, funders, and through conferences and webinars of the broader oral health professions.

Budget and Sustainability

(500-word limit)

Note: Charts and tables may be used.

1. What is/was the budget for the project?

Apple Tree staff have experience operating programs, raising funds, and ensuring that new programs are successful and sustainable. The majority of the ongoing operating costs of programs are sustained by earned-income. Grants and gifts are generally requested for innovations projects, new equipment, growth, remodeling, and to support uncompensated and charity care. Our 2023 organizational budget is \$30,532,733. We typically have an estimated 50% of uncompensated care for services we provide. In 2022, we budgeted for \$3.2 million in grant funding to support new projects, expansions, and innovations.

2. How is the project funded (e.g., federal, national, state, local, private funding)?

Apple Tree's multiple funding streams support a sustainable business model. Earned revenue from dental services is supplemented with federal, state, and local foundation grants, corporate support, individual gifts, and consulting services. For example, regional or family foundations have been used to fund equipment or care provision to underserved children and healthcare plans or foundations have been used to fund development of infrastructure to increase utilization and expand access. Apple Tree's growth over 38 years demonstrates that a non-profit group dental practice with a diversified patient and funding mix can successfully serve the most vulnerable and dependent populations including the very young and older adults residing in long-term care facilities. Although establishing Apple Tree as a 501(c)(3) organization required groundbreaking effort by Apple Tree's founders, that non-profit structure has proven essential to its sustainability.

3. What is the sustainability plan for the project?

Apple Tree deploys the following strategies for future sustainability:

- 1) Leverage our skilled teams and unique strengths to build sustainable community collaborations that help people of all ages and abilities achieve health and well-being.
- 2) Advance oral health care delivery, education, research, and public policy by developing and testing innovative solutions that influence local and national systemic change.
- 3) Strengthen Apple Tree's financial health and sustainability by investing in purposeful employee development, optimal clinical facilities, and strong community partnerships.

Examples of organizational investment in policy and advocacy include dedicating staff time to participation on advisory committees, in associations, coalitions, and networks. An example of successful advocacy from 2002 was the establishment of Minnesota's critical access dental provider [program](#), which pays a higher reimbursement rate for practices serving a higher volume of Medicaid patients. Currently, we are working to obtain a specialty reimbursement rate for our pediatric dentists, which will help sustain the pediatric program.

Another aspiration of the pediatric program is to ensure sufficient trained support staff to enable delegation of educational, preventive, and care coordination services unique to the needs of the target population. The organization has begun steps to intentionally function within a comprehensive dental home network in partnership with other community partners and dental organizations. Both staff recruitment/training and innovative coordination of care rely on grant funding that the organization is well suited to secure.

Lessons Learned

(750-word limit)

- (a) What lessons were learned that would be useful for others seeking to implement a similar project?

One learning theme highlights the importance of a **collaborative organizational structure that values access to optimal care above revenue**. The typical business model within pediatric specialty practices relies on a high volume of diverse patient needs; that is, the cost, time, and treatment intensity of complex patients is offset by a high volume of healthy well-visits who are managed almost entirely by support clinical staff (dental assistants and hygienists). In the pediatric program described, specialty dentists see children of the highest complexity, with general dentists, dental therapists, dental hygienists, and dental assistants managing the care of children with low to moderate oral health and behavioral needs. The cost of the lower volume of complex patients served by the specialty providers is offset by revenue from care provided by the remaining professionals within the organization. The

commitment of the organization to enable access for vulnerable and complex children from underserved communities makes this skewed balance possible. Additionally, it has been important to recruit and retain specialty providers who have a passion for serving the oral health needs of complex children and who thrive within a high-intensity treatment context. This collaborative environment has also allowed pediatric patients and their families to receive comprehensive and continuous care that suits their needs over time (i.e., transitioning from the pediatric program into the special needs program or into the general dentistry program).

Another learning theme relates to the importance of **a uniform infrastructure and team learning across the organization**. Continuing education training of staff across the organization, led by our pediatric specialists, has enhanced the preparedness and confidence of clinicians and staff in working with children and their families, and empowered them to address a wider range of pediatric care needs. Creating uniform clinic documentation strategies has elevated the overall standard of care for children across the organization. The organization's AEGD residents have direct training opportunities with pediatric and special needs specialty staff. When these residents are retained as staff after completing their training, they contribute exceptionally as general dentists to the success of the pediatric program.

A third learning relates to **efficiency and effectiveness of visits that appropriately align appointment format and clinician type with the needs and goals of the patient**. Teledentistry and the tiered skillset of team members within the program enables this alignment. For patients who are identified as requiring the care of a pediatric specialist or requiring advanced behavior guidance, such as conscious sedation or general anesthesia, they are referred to our Pediatric Specialty Care Team. The teledentistry visit ensures the child, the family, and the pediatric specialist are all well informed and aligned prior to an in-person consultation. When the family must travel a very long distance to see the pediatric team and treatment under general anesthesia is clearly required, such as rampant decay in a very young child or a patient with significant special needs who cannot cooperate for an assessment or treatment, the pediatric specialist may determine that a teledentistry evaluation is sufficient for a full general anesthesia consultation. When the pediatric specialist determines this is appropriate, it decreases wait time for treatment, eliminates unnecessary and expensive travel for the family, and improves availability for other patients who require in-person visits, all while still prioritizing personalized care, safety, and optimizing family satisfaction. The teledentistry triage may also discern that a patient's needs may be appropriately managed by a member of the clinical team other than the pediatric dentist, thereby avoiding unnecessary use of specialist time.

(b) Any unanticipated outcomes?

(c) Is there anything you would have done differently?

Resources

List resources developed by this project that may be useful to others (e.g., guidelines, infographics, policies, educational materials). Include links if available.

- Pediatric resources page of organization website:
<https://www.appletreedental.org/services/pediatrics/>
- List of links
 - Teledentistry/MouthWatch: <https://www.mouthwatch.com/> or <https://www.mouthwatch.com/teledent-and-the-patient-journey-a-quick->

[guide/?utm_content=245845674&utm_medium=social&utm_source=linkedin&https_channel=lcp-3487301](https://www.mndta.org/guide/?utm_content=245845674&utm_medium=social&utm_source=linkedin&https_channel=lcp-3487301)

- MN dental therapy info: <https://www.mndta.org/>
- <https://www.aap.org/en/patient-care/oral-health/oral-health-practice-tools/>
- AAPD
 - [dental home definition](#)
 - [caries risk assessment](#)

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| To Be Completed By ASTDD | |
|----------------------------|--------------------------------------------------|
| Descriptive report number: | 26017 |
| Associated BPAR: | Early Childhood Caries Prevention and Management |
| Submitted by: | Apple Tree Dental |
| Submission file name: | DES26017MN-apple-tree-ped-prog-2023 |
| Submission date: | September 2023 |
| Last reviewed: | September 2023 |
| Last updated: | September 2023 |