



Dental Public Health Activity Descriptive Report Submission Form

The Best Practices Committee requests that you complete the Descriptive Report Submission Form as follow-up to acceptance of your State Activity Submission as an example of a best practice.

Please provide a more detailed description of your **successful dental public health activity** by fully completing this form. Expand the submission form as needed but within any limitations noted.

ASTDD Best Practices: [Strength of Evidence Supporting Best Practice Approaches](#)
Systematic vs. Narrative Reviews: <http://libguides.mssm.edu/c.php?g=168543&p=1107631>

NOTE: Please use Verdana 9 font.

CONTACT PERSON PREPARING THE SUBMISSION AND TO ANSWER QUESTIONS
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PROVIDE CONTACT INFORMATION FOR ONE ADDITIONAL PERSON WHO COULD ANSWER QUESTIONS REGARDING THIS PROGRAM
<p>Name: Michael J. Helgeson, DDS</p> <p>Title: CEO</p> <p>Agency/Organization: Apple Tree Dental</p> <p>Address: 2442 Mounds View Blvd, Mounds View, MN 55112</p> <p>Phone: 763-754-5780</p> <p>Email Address: mhelgeson@appletreedental.org</p>

SECTION I: ACTIVITY OVERVIEW

Title of the dental public health activity:

Dental Therapists: Safe, Effective, Productive and Cost-effective Dental Team Members

Public Health Functions*: Check one or more categories related to the activity.

"X"	Assessment
	1. Assess oral health status and implement an oral health surveillance system.
	2. Analyze determinants of oral health and respond to health hazards in the community
	3. Assess public perceptions about oral health issues and educate/empower them to achieve and maintain optimal oral health
Policy Development	
	4. Mobilize community partners to leverage resources and advocate for/act on oral health issues
X	5. Develop and implement policies and systematic plans that support state and community oral health efforts
Assurance	
	6. Review, educate about and enforce laws and regulations that promote oral health and ensure safe oral health practices
X	7. Reduce barriers to care and assure utilization of personal and population-based oral health services
X	8. Assure an adequate and competent public and private oral health workforce
	9. Evaluate effectiveness, accessibility and quality of personal and population-based oral health promotion activities and oral health services
	10. Conduct and review research for new insights and innovative solutions to oral health problems

[*ASTDD Guidelines for State and Territorial Oral Health Programs that includes 10 Essential Public Health Services to Promote Oral Health](#)

Healthy People 2020 Objectives: Check one or more key objectives related to the activity. If appropriate, add other national or state HP 2020 Objectives, such as tobacco use or injury.

"X"	<u>Healthy People 2020 Oral Health Objectives</u>
X	OH-1 Reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth
X	OH-2 Reduce the proportion of children and adolescents with untreated dental decay
X	OH-3 Reduce the proportion of adults with untreated dental decay
	OH-4 Reduce the proportion of adults who have ever had a permanent tooth extracted because of dental caries or periodontal disease
	OH-5 Reduce the proportion of adults aged 45 to 74 years with moderate or severe periodontitis
	OH-6 Increase the proportion of oral and pharyngeal cancers detected at the earliest stage
X	OH-7 Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year
X	OH-8 Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year
	OH-9 Increase the proportion of school-based health centers with an oral health component
	OH-10 Increase the proportion of local health departments and Federally Qualified Health Centers (FQHCs) that have an oral health component
	OH-11 Increase the proportion of patients who receive oral health services at Federally Qualified Health Centers each year

OH-12	Increase the proportion of children and adolescents who have received dental sealants on their molar teeth
OH-13	Increase the proportion of the U.S. population served by community water systems with optimally fluoridated water
OH-14	Increase the proportion of adults who receive preventive interventions in dental offices
OH-15	Increase the number of States and the District of Columbia that have a system for recording and referring infants and children with cleft lips and cleft palates to craniofacial anomaly rehabilitative teams
OH-16	Increase the number of States and the District of Columbia that have an oral and craniofacial health surveillance system
OH-17	Increase health agencies that have a dental public health program directed by a dental professional with public health training

"X"	Other national or state Healthy People 2020 Objectives: (list objective number and topic)

Provide 3-5 Key Words (e.g. fluoride, sealants, access to care, coalitions, policy, Medicaid, etc.) These will assist those looking for information on this topic:

Workforce, oral health workforce, access to care, dental therapist, dental therapy, Apple Tree Dental

Executive Summary: Complete after Section II: Detailed Activity Description. Please limit to 300 words in one or two paragraphs.

Provide a brief description of the dental public health activity. Include information on: (1) what is being done; (2) who is doing it and why; (3) associated costs; (4) outcomes achieved (5) lessons learned, both positive and negative.

In 2009, Minnesota became the first state to authorize the education and licensure of dental therapists to address long-standing access to dental care issues for Minnesota Health Care Program (Medicaid) enrollees and other under-served populations. Apple Tree Dental (Apple Tree), a non-profit group dental practice, is dedicated to improving the oral health of all people, including those with special access needs, who face barriers to care (<https://www.appletreedental.org>). More than 80% of Apple Tree's patients are insured through Medicaid with reimbursement rates that do not cover the cost of care and restrict our ability to recruit/retain dentists. Dental therapists were successfully added as new members of Apple Tree's clinical dental teams in order to cost-effectively expand access to care.

Apple Tree has employed dental therapists since 2011, beginning with 2 members of the first graduating class and now employs 10 dental therapists. From 2012 through 2018, dental therapists at Apple Tree collectively provided over 58,000 dental encounters in both urban and rural settings and delivered diagnostic, preventive, and basic restorative dental services valued at more than \$11 million for patients of all ages, including older adults and people with special needs. They have proven themselves to be safe, effective, productive and cost-effective team members. Apple Tree estimates the annual employment costs for dental therapists to be, on average, \$50,000 less than that of dentists. Dental therapists' financial productivity has been high enough to help with the financial challenge of low public program reimbursement rates, which increases our ability to serve more patients. Despite the contentious debate leading up to the authorization of their profession, dental therapists have become accepted and by patients and respected by colleagues. The experiences outlined below and in linked reports and case studies may provide helpful guidance to stakeholders and policy-makers considering dental therapy as a workforce strategy to address access to care issues.

SECTION II: DETAILED ACTIVITY DESCRIPTION

Provide detailed narrative about the dental public health activity using the headings provided and answering the questions. Include specifics to help readers understand what you are doing and how it's being done. References and links to information may be included.

****Complete using Verdana 9 font.**

Rationale and History of the Activity:

1. What were the key issues that led to the initiation of this activity?

Dental reimbursement rates and administrative complexity have long created disincentives to participation in Minnesota Health Care Programs (MHCP), which include Medicaid (called Medical Assistance in Minnesota) and MinnesotaCare (Minnesota's Basic Health Plan). For willing safety-net dental providers, the gap between reimbursement rates and the cost of providing dental services has grown to the point of threatening their financial viability. Even with grants, non-profit organizations' ability to expand services for thousands of MHCP enrollees of all ages seeking dental care has been restricted.

For the State of Minnesota and for Apple Tree Dental, adding dental therapists as a new dental team member was in direct response to persistent access to care issues. Authorizing legislation was intended to address the need for cost-effective care delivery to reach more MHCP enrollees, whether the dental therapist would be employed in private practice or safety-net settings.

2. What rationale/evidence (may be anecdotal) did you use to support the implementation of this activity?

Multiple reports, including the March 2013 *Medical Payment Rates for Dental Services report of the Minnesota Office of the Legislative Auditor (OLA)**, and its February 2014 follow up, *Recommendations for Improving Oral Health Services Delivery System** have identified problems and potential solutions for issues with MHCP. Problems include low utilization rates and reports that many MHCP enrollees experience difficulty finding a dental provider accepting their public program insurance. In addition to increasing reimbursements, recommendations included a call for "an expanded workforce to increase access and enhance cost-effectiveness."

(* links provided below)

Previously, Minnesota had authorized innovative workforce approaches, including:

- Restorative Expanded Functions (REF) to allow dental hygienists and assistants with appropriate education to perform portions of restorative procedures other than diagnosis and "drilling" to increase dentists' efficiency and practice capacity.
- Collaborative Practice to allow dental hygienists to provide services within their scope of practice in a variety of community-based locations outside the dental office. A signed Collaborative Practice Agreement with a dentist is required.
- Teledentistry to allow remote diagnostic services for patients seen at health care and long-term care facilities, schools, public health agencies, non-profit organizations and other accessible locations, removing transportation barriers and facilitating coordination of needed care. Initially used to link collaborative practice dental hygienists with dentist to complete the diagnostic phase of care, Teledentistry reduces travel barriers and allows care coordination based upon the individual and collective needs, whether that be scheduling appointments at a dental office or of an on-site care team back at the Head Start center, long-term care facility or other community-based location.

Successful implementation of these workforce innovations, along with evidence of safety from international dental therapy models, may have primed stakeholders' and policy-makers' support for dental therapy. Additionally, a 2004 survey of dental hygienists found a high level of interest in doing more for their patients — indicating a potential supply of licensed professionals prepared for career enhancement.

At Apple Tree, a history of delivery model innovation and team-based care, including utilization of REF and Collaborative Practice, set the stage for implementation of dental therapy. More than 80% of Apple Tree's patients are enrolled in MHCP, and all of our programs have waiting lists of people seeking dental care. Clearly, a dental professional with a basic scope of practice covering primary

dental care needs and lower employment cost than a dentist would be a desirable addition to our dental teams.

3. What month and year did the activity begin and what milestones have occurred along the way? (May include a timeline.)

In the years preceding authorizing legislation, Apple Tree actively participated in advocacy efforts, seeking to address sincere concerns and appropriate implementation to improve access to needed dental services.

- 2009 – Minnesota Legislature authorizes dental therapy. *
- 2011 - Initial cohorts of dental therapists graduate. Apple Tree employs two dental therapists from the first class.
- 2014 Minnesota Department of Health and Minnesota Board of Dentistry report to the legislature on dental therapy. *
- 2018 - Case studies of two dental therapists employed at Apple Tree from 2014-2016 completed. *
- 2019 - Ten dental therapists employed at Apple Tree throughout the state of Minnesota.

Beginning with two members of the first graduating class, Apple Tree has steadily increased the number of dental therapists on our care teams in both urban and rural settings. Each dental therapists’ patients and the mix of dental procedures provided is unique to the needs of the settings in which they practice. All treat both children and adults. The vast majority of their patients are MHCP enrollees or low-income and uninsured, far exceeding the greater than 50% required in Minnesota Statutes.

The case studies mentioned above highlight two Apple Tree dental therapists, one working in a rural setting and one providing care one day per week in a long-term care setting. The case studies, available on Apple Tree’s website*, include findings unique to these particular therapists during the three-year period from 2014-2016. As detailed in the case studies and highlighted below, both were found to be safe, effective, and respected dental team members, readily accepted by their patients.

(* links provided below)

The sections below follow a logic model format. For more information on logic models go to: [W.K. Kellogg Foundation: Logic Model Development Guide](#)

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES
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1. What resources were needed to carry out the activity? (e.g., staffing, volunteers, funding, partnerships, collaborations with various organizations, etc.)

Enactment of authorizing legislation required collaboration between legislators, professional associations, educators, and advocates including public health dental professionals, health care providers, non-profit groups assisting children, people with disabilities, seniors and others facing barriers to dental care. The Board of Dentistry established a licensure requirement and guidelines for required Collaborative Management Agreements. The Department of Human Services (Minnesota’s Medicaid agency), managed care organizations, and 3rd party administrators provided guidelines for credentialing and billing procedures.

Implementation at Apple Tree required and received the full support of leadership and staff.

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES
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2. Please provide a detailed description the key aspects of the activity, including the following aspects: administration, operations, and services.

Administration:

Licensure as a dental therapist requires graduation from the program and successful completion of the Central Regional Dental Testing Service (CRDTS) clinical exam and Minnesota’s jurisprudence exam.

After 2,000 hours of dental therapy practice, a three-part exam by the Minnesota Board of Dentistry is required for advanced dental therapy status. This exam includes submission of 5 patient cases for chart review, a written exam, and oral interview with board members. Advanced dental therapists can perform their full scope under general supervision including oral evaluations, treatment planning and extraction of periodontally involved teeth.

Collaborative Management Agreements were established for each dental therapist, outlining the types of patients, procedures, practice settings and supervision levels agreed upon with their supervising dentists. The Agreements, which are reviewed annually and/or needed updates, include protocols for record keeping, managing medical emergencies, quality assurance, managing patients with medical complexities, consultations & referrals, dispensing or administering medications, and supervising dental assistants.

Credentialing and enrollment with Minnesota Health Care Programs (Medicaid) is required to allow billing for services provided. Dental therapists are assigned National Provider Identifier (NPI) numbers. At Apple Tree, dental therapists' billing is done by support staff along with the services provided by dentists and dental hygienists.

Operations:

Incorporating a new dental team member required administrative changes, staff education and ongoing evaluation. Apple Tree's efforts had strong support from leadership which was conveyed through communications and involvement in the planning and implementation processes.

In order to insure smooth integration into the dental team, education sessions were provided for all staff, both clinical and administrative, on the dental therapists' scope of practice. Workflows and appointment scheduling were redesigned with goals to reduce wait time for appointments for patients and towards "top of license" efficiency for dental therapists and dentists. Patient education materials describing the education and scope of practice of dental therapists were created. Patients were offered the choice to see a dental therapist. This preparation and informational resources were beneficial to staff and may have contributed to the initial, favorable patient acceptance.

Services:

Dental therapists at Apple Tree provide a range of diagnostic, preventive, and restorative services for both children and adults. Scheduling primary dental care services with dental therapists opens time within dentists' schedules for more complex services including oral surgery and prosthodontics. Dual licensed dental hygienist/dental therapists are also able to provide periodontal services.

Dental therapists and their supervising dentists communicate directly and via Apple Tree's cloud-based Electronic Health Record (EHR), which supports tele-dentistry interactions, including asynchronous, often called "store and forward," collaborations. Common reasons reported for consultation include medication changes, when a modification might be needed in a previously planned procedure, when the diagnosis was unclear, when evaluating toothaches, and when procedures outside the dental therapist's scope needed to be planned, such as root canal treatments or dentures or partial dentures.

Apple Tree operates seven "Centers" (clinics) in Minnesota; two in the twin cities metropolitan area plus Hawley, Fergus Falls, Little Falls, Madelia, and Rochester. Since 2011, all have employed one or more dental therapists. In addition to our Centers, dental therapists have provided on-site patient care with our mobile program in long-term care facilities, at Head Start Centers, in a pediatric primary care practice, and on a behavioral health campus.

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES
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3. What outputs or direct products resulted from program activities? (e.g., number of clients served, number of services units delivered, products developed, accomplishments, etc.)

From 2012 through 2018, dental therapists at Apple Tree collectively provided over 58,000 dental encounters and delivered dental services valued at more than \$11 million. They provided diagnostic, preventive, and restorative care in both urban and rural settings for patients of all ages, including older adults and people with special needs.

Based upon interviews and evaluations, Apple Tree's dental therapists have been accepted by their colleagues and patients alike. Dental team members reported that initial questions about the dental

therapist's roles were eased through education of the dental staff in regular team meetings. Trust developed between the dental therapist, dentists, and other team members with experience and open communication. Dentists and schedulers reported that patients are able to be seen with shorter wait times for appointments and that dentists are able to spend less time providing routine restorative care, freeing them up to provide other needed services. Anecdotally and based upon growing employment demand, sharing of actual practice experience has both increased awareness of the benefits of this new team member and allayed genuine concerns raised prior to the implementation of dental therapy in Minnesota.

A nearly seven-year track record demonstrates that they are well educated in their scope of practice and able to safely serve children and adults. The high volume of care provided for MHCP patients indicates that dental therapists are effective in improving access to dental care.

INPUTS	PROGRAM ACTIVITIES	OUTPUTS	OUTCOMES
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4. What outcomes did the program achieve? (e.g., health statuses, knowledge, behavior, care delivery system, impact on target population, etc.) Please include the following aspects:
- a. How outcomes are measured
 - b. How often they are/were measured
 - c. Data sources used
 - d. Whether intended to be short-term (attainable within 1-3 years), intermediate (achievable within 4-6 years), or long-term (impact achieved in 7-10 years)

Dental therapists have proven to be safe, effective and productive team members at Apple Tree Dental.

Provider productivity, including that of dental therapists, is analyzed as part of Apple Tree's annual program budgeting and performance evaluations. Production reports generated by the EHR are based on the American Dental Association Current Dental Terminology (CDT) procedure codes and also served as a main data source for the case studies. Available data includes the number and specific type of procedures provided and the amount charged for each CDT code. For the case studies, codes and charges were aggregated by category (diagnostic, preventive, restorative, etc.). The EHR's scheduling module provides the number of patients seen each day and the number of days worked by individual providers.

In the case studies, average daily production was used to compare dental therapists' and dentists' productivity. In the rural setting, the dental therapist's average daily production was 94% of the dentists' during the three-year study period: \$2,951 per day (DDS) compared to \$2,762 (ADT). In the long-term care case study, the dental therapist's average daily production increased steadily from \$2,201 in 2014 to \$3,122 in 2016. During the final months of the case study, the dentist and dental therapist each had gross daily production over \$3000: \$3,618 (DDS) compared to \$3,003 (ADT). The procedure mix of the two providers is not identical, complicating a one-to-one comparison of revenue production.

Apple Tree estimates the annual employment costs for dental therapists to be, on average, \$50,000 less than that of dentists. Dental therapists' procedure mix and financial productivity has been high enough to help with the financial challenge of low public program reimbursement rates, which in turn helps Apple Tree to be able to serve more patients.

Budgetary Information:

NOTE: Charts and tables may be used to provide clarity.

1. What is the annual budget for this activity?

2. What are the costs associated with the activity? (Including staffing, materials, equipment, etc.)

Fixed costs, including dental supplies and equipment, facilities and utilities, etc., are the same for dental therapists as for other dental providers on our team. Costs to employ dental therapists, like

other dental professionals, vary with experience, location, and with supply of /demand for professionals. All Apple Tree Dental staff are salaried employees.

Minnesota's extremely low Medicaid dental reimbursement rates necessitate efficient operations in order to provide services to enrollees. Estimates from organizations in Minnesota of the employment costs differential between dentists and dental therapists vary. On average at Apple Tree, annual employment cost for a dental therapist is approximately \$50,000 less than for a dentist. For a non-profit, this "savings" translates into a greater ability to provide more care to more patients.

3. How is the activity funded?

Apple Tree strives to cover operations primarily through earned revenue from dental services provided by the dental therapists and other members of the dental care team. Foundation and grant support are sought for equipment, pilot projects and special programs.

4. What is the plan for sustainability?

Apple Tree will continue to advocate for sustainable public program reimbursement rates that cover the cost of operations.

A marketplace signal of acceptance by employers and patients is a growing demand for dental therapists and full-employment of graduates. A third dental therapy education program is being planned in south-central Minnesota.

Lessons Learned and/or Plans for Addressing Challenges:

1. What important lessons were learned that would be useful for others looking to implement a similar activity? Was there anything you would do differently?
2. What challenges did the activity encounter and how were those addressed?

Dental therapists have safely provided dental care in Minnesota since 2011. In fact, demand for dental therapists has increased as questions about their safety and efficiency have been answered. As the first state to authorize and educate dental therapists, some credentialing and billing systems were not in place for initial employers. Even as administrative systems have been developed, accurately tracking the impact of dental therapy has been challenging due to limitations of current data systems at the state level which rely primarily on Medicaid claims data. Policy makers at the state level may benefit from our experience to focus their attention on the licensing, credentialing and billing systems needed to support graduates rather than on questions of patient safety.

Apple Tree learned that education and training for all staff on the dental therapists' scope of practice was helpful to the smooth integration of this new team member. Both clinical and administrative staff have recognized that dental therapists have allowed more patients to be seen and that the services they provide free up dentists' time. Our patients have accepted dental therapists rapidly with remarkably few concerns or questions. Analysis of productivity indicates that as a lower cost provider, dental therapists positively impact practice economics. As a non-profit organization, this allows Apple Tree to provide more dental care to more patients. This same cost-effectiveness can be anticipated in any setting where underserved populations with inadequate reimbursements make providing dental care financially challenging.

Available Information Resources:

Share any models, tools, and/or guidelines developed by the program specifically for this activity that may be useful to others seeking additional information. Hyperlink resources if possible.

In addition to the linked resources below, other patient or staff education materials mentioned in this report may be available upon reasonable request to Apple Tree Dental.

State of Minnesota, Office of the Legislative Auditor. Evaluation Report: Medical Assistance Payment Rates for Dental Services. St. Paul: Minnesota Department of Health; March 2013. Available from: <http://www.auditor.leg.state.mn.us/ped/pedrep/madentalrates.pdf>

February 2014 Recommendations for Improving Oral Health Services Delivery System Available from:
<https://www.leg.state.mn.us/docs/2014/mandated/140261.pdf>

Minnesota Dental Therapy Statutes: <https://www.revisor.mn.gov/statutes/cite/150A.105>
and <https://www.revisor.mn.gov/statutes/cite/150A.106>

Early Impacts of Dental Therapists in Minnesota Report to the Legislature 2014 by Minnesota Department of Health and Minnesota Board of Dentistry
https://mn.gov/boards/assets/2014DentalTherapistReport_tcm21-45970_tcm21-313376.pdf

Apple Tree Dental Dental Therapy Case Studies available from:
<http://www.appletreedental.org/dental-therapists-expand-access-care-children-adults/>
and <http://www.appletreedental.org/dental-therapists-bring-care-people/>

Restorative Expanded Functions:
<https://mn.gov/boards/dentistry/currentlicensees/resorativefunctions.jsp> and
https://mn.gov/boards/assets/Minnesota%20Statutes%202017%2C%20Section%20150A.10_tcm21-328474.pdf

The Community Dental Team toolbox contains information on utilization and practices pertaining to professionals working as a "Community Dental Team", to include community health workers, collaborative practice dental hygienists, dental therapists and medical/health-care colleagues:
<http://www.normandale.edu/departments/health-sciences/dental-hygiene/minnesota-21st-century-dental-team--toward-access-for-all/community-dental-team>

TO BE COMPLETED BY ASTDD	
Descriptive Report Number:	DES26010MNappletreedentaltherapists-2019
Associated BPAR:	The Role of Oral Health Workforce Development in Access to Care
Submitted by:	Apple Tree Dental
Submission filename:	DES26010MNappletreedentaltherapist-2019
Submission date:	March 2019
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