



Public Health Project/Activity Descriptive Report Form

Please provide a detailed description of your **successful dental public health project/activity** by fully completing this form. Expand the submission form as needed but within any limitations noted. Please return completed form to: lcofano@astdd.org

NOTE: Please use Arial 10 pt. 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

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SECTION I: ACTIVITY OVERVIEW

Title of the dental public health activity:

Apple Tree Dental

Public Health Functions* and the 10 Essential Public Health Services to Promote Oral Health:
Check one or more categories related to the activity.

“X”	Assessment
x	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
x	3. Assess public perceptions about oral health issues and educate/empower them to achieve and maintain optimal oral health
	Policy Development
x	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
x	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 2030 Objectives: Please list HP 2030 objectives related to the activity described in this submission. If there are any state-level objectives the activity addresses please include those as well.

- Reduce the proportion of adults with active or untreated tooth decay — OH 03
- Increase the proportion of oral and pharyngeal cancers detected at the earliest stage — OH 07
- Increase use of the oral health care system — OH 08
- Reduce the proportion of children and adolescents with lifetime tooth decay — OH 01
- Reduce the proportion of children and adolescents with active and untreated tooth decay — OH 02
- Reduce the proportion of people who can't get the dental care they need when they need it — AHS-05
- Reduce the proportion of older adults with untreated root surface decay — OH-04
- Reduce the proportion of adults aged 45 years and over who have lost all their teeth — OH-05
- Reduce the proportion of adults aged 45 years and over with moderate and severe periodontitis — OH-06
- Increase the proportion of low-income youth who have a preventive dental visit — OH 09
- Increase the proportion of children and adolescents who have dental sealants on 1 or more molars — OH 10

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:

Access to care: adults and older adults services, access to care: individuals with special health care needs, prevention: adults and older adults oral health, prevention: individual with special health care needs

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.

Apple Tree Dental was founded as a non-profit dental organization to address the lack of access to dental care for residents of nursing and assisted living facilities in Minneapolis/ St. Paul MN. (Twin Cities) Its "Community Collaborative Practice" delivery model has evolved and grown over 35 years. Eight Centers for Dental Health serve as clinics for patients of all ages and abilities and as care coordination centers for a nationally recognized mobile dental program. Apple Tree's approximately 200 employees include dentists, oral surgeons, nurse anesthetists, advanced dental therapists, dental hygienists, dental assistants, clinic and community care coordinators, and lab technicians, supported by corporate and administrative staff.

Mission: To overcome barriers to oral health.

Vision: To inspire partnerships that foster healthy communities.

Strategies:

- 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.
- Advance oral health care delivery, education, research, and public policy by developing and testing innovative solutions that influence local and national systemic change.
- Strengthen Apple Tree's financial health and sustainability by investing in purposeful employee development, optimal clinical facilities, and strong community partnerships.

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. Apple Tree's growth over 35 years demonstrates that a non-profit group dental practice with a diversified patient and funding mix can successfully serve older adults including the most dependent who reside in long-term care facilities. Research using Apple Tree's longitudinal database revealed that routine care can successfully stabilize the oral health of institutionalized elders. 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.

SECTION II: DETAILED ACTIVITY DESCRIPTION

Provide a 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 Arial 10 pt.**

Rationale and History of the Activity:

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

In 1984, a private, non-profit model to address the unmet dental needs of nursing facilities residents was conceptualized by dental school classmates Dr. Michael Helgeson, Dr. George Goldhammer, and Dr.

Michael Gavino and Barbara Smith, RDH, MPH, PhD. At the time, the only non-profit dental practices in Minnesota were the School of Dentistry, Hennepin County Medical Center, or dental programs within larger organizations, such as the Federally Qualified Health Centers.

Apple Tree was founded to address the longstanding lack of access to dental care for residents of nursing and assisted living facilities. However, barriers to care and the health consequences of dental disease were not yet widely accepted. In 1985, a Dental Health Professional Shortage Area (HPSA) designation was applied for on behalf of the long-term care population of the Twin Cities metropolitan area. HPSA designation is used as an eligibility requirement for loan repayment and grants. Although evidence of institutionalized elders' unmet needs and difficult access through the traditional care systems was known to direct care staff and geriatric health care providers, the state dental association's lack of support for a shortage area designation defeated that application. Similarly, the need to integrate dental into care settings outside the dental office had not yet become a part of health policy efforts.

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

Concern about access to care for vulnerable adults has grown along with an aging population. Healthy People 2030 includes a Leading Health Indicator to "Increase the proportion of children, adolescents, and adults who use the oral health care system." Financial and access barriers to dental care faced by older adults were highlighted in U.S. Senator Bernie Sanders' "Dental Crisis in America" 2012 report to the Subcommittee on Primary Health and Aging, Oral Health America's "Tooth Wisdom" project, and 2013 "State of Decay" report and the work of the ADA's National Elder Care Advisory Committee. The high cost of untreated dental disease and its impact on overall health provide a financial motivation to overcome the barriers and reduce disparities in access to care.

Apple Tree's Community Collaborative Practice model addresses identified access barriers by proactively screening all nursing facility residents and providing care coordination for treatment of identified dental needs in the most accessible and cost-effective location. Apple Tree's program growth over the past 35 years demonstrates that a non-profit group dental practice with a diversified patient and funding mix can successfully serve older adults including the most dependent who reside in long-term care facilities. Research using Apple Tree's longitudinal database revealed that routine care can successfully stabilize the oral health of institutionalized elders.

Although establishing Apple Tree as a 501(c)(3) organization required groundbreaking effort by Apple Tree's founders, it is noteworthy that non-profit structure has proven essential to the sustainability of the organization.

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

Formation

In 1985, personal loans were secured to launch the operation, patient care services commenced with one portable dental unit. In 1991, Dr. Michael Helgeson, became the first paid executive director of the organization.

Growth

From 1986-1993, Apple Tree provided dental services exclusively utilizing mobile dental equipment. This changed in 1994 when Apple Tree opened its first outpatient dental clinic and laboratory in the Twin Cities to augment the services being provided through the mobile program. In response to the needs of local communities, three decades of program expansion and diversification have, included the following milestones in clinical programs.

1996	Creation of the first replication program in Charlotte, North Carolina, Carolina's Mobile Dentistry. Subsequently, Apple Tree helped establish two additional replications in Greensborough, Access Dental Care, and Sicily Island, Louisiana, Operation Smile. These programs are independent entities and still in existence today.
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1997	Apple Tree opens its first rural practice in Hawley in Northwestern Minnesota serving the Red River Valley and eastern North Dakota. In response to community needs, Head Start services and dental care for low-income families and immigrant populations are added, while expanding services for residents of long-term care facilities in the Red River Valley area.
1999-2001	<p>Technology and equipment advances included conversion of Apple Tree's customized electronic health records systems (programed by Dr. Helgeson) from Macintosh to Windows operating systems, increasing network capabilities for a larger scale delivery system.</p> <p>With research and development by A-dec founder, Ken Austin, and support from the Minnesota Department of Health, Patterson Dental and others, custom mobile bases are created for the same A-dec equipment used in the clinics. Custom power carts with vacuum systems, x-ray and sterilization carts and dental assistant carts are also designed and built. The resulting "Mobile Dental Offices" are Apple Tree's most well-known innovation and key to providing comprehensive care in community settings.</p>
2003-2005	<p>Apple Tree enters into partnerships with Minnesota State Colleges, Mankato State University Dental Hygiene program, and the Madelia Community Hospital to establish an Apple Tree Madelia program within the hospital. Apple Tree also offers on-site dental care to Head Start programs in southwestern Minnesota. Prior to Apple Tree's involvement the clinic in Madelia offered preventive care by dental hygiene students and struggled to retain coverage by a dentist. Comprehensive dental care continues to be provided year-round at the clinic and a school-based program has been added.</p> <p>Two grant funded pilot projects provide successful tests of Telehealth technologies to increase access to care: "Expanded Functions Through Teledentistry" in partnership with Normandale Community College funded by Minnesota Department of Health and "The Apple Tree Head Start Teledentistry Project" in partnership with local Head Start programs funded by the federal Administration for Children, Youth and Families.</p>
2008	Rochester Eldercare mobile program opens in response to a request from physicians at the Mayo Clinic concerned about the lack of access to dental care for nursing facility residents. The program expanded through innovative partnerships to serve group homes, a residential mental health campus, and added general anesthesia services for severely disabled adults at a regional hospital in Winona.
2010	Fergus Falls program opens in a former private practice clinic in response to requests from Ottertail County public health leaders. Through a partnership with the West Central Initiative, it also provides on-site screening, prevention, and dental services at outreach sites in the region.
2011	IV sedation services for disabled adults began in late 2010 and expanded significantly to provide a safe and more cost-effective alternative to general anesthesia for patients with disabilities and behavioral challenges. Adding nurse anesthetists further diversified the interprofessional care team.
2013	An outpatient clinic with IV sedation capabilities opens in Rochester and serves as the care coordination center for the regional mobile program.
2014	The Mounds View Center for Dental Health opens with a new outpatient clinic design, ceiling lifts for transferring patients, with space and plans to expand as an ambulatory surgery center designed for interdisciplinary outpatient services for people with special needs.
2014 - 2017	Apple Tree Dental and CHI St. Gabriel's Health began an interprofessional partnership to improve access to oral health care in Morrison County beginning with an outreach program with staffing from Apple Tree's Twin Cities programs. By 2017, local staff was hired for the Little Falls Center for Dental Health.
2015-2017	Following three years of planning efforts with local leaders, Apple Tree opened the San Mateo Center for Dental Health with grant support from the Peninsula Health Care and Sequoia Healthcare Districts. In 2017, the Center and mobile program, renamed Sonrisas Dental Health, transitioned to entirely local leadership.
2017	Three years' planning and preparation culminates with a launch of a NYU Langone Advanced Education in General Dentistry (AEGD) Residency program at Apple Tree's Mounds View Center. Through this accredited program, Apple tree hosts two AEGD residents / year, providing pediatric, geriatric, and oral surgery mentored experiences treating complex patients of all ages, including providing care under IV Sedation.

2018	Apple Tree partners with North Metro Pediatrics to provide dental services at this pediatric primary care clinic. On-site clinical services by an Advanced Dental Therapist, teledentistry and care coordination increase access and convenience for families.
2019	Apple Tree receives funding to launch a four-phase, five-year project to establish the Fairmont Center for Dental Health within the Mayo Clinic Health System's Fairmont Campus in south central Minnesota. Apple Tree's mobile dental offices will provide initial access within the Clinic. Once remodeling for the Center for Dental Health within the Mayo Clinic building is completed, a mobile program will deliver dental services in and around Martin County at long-term care facilities and in other community settings in this rural region along the Iowa border.
2020	A public-private partnership between Apple Tree and the Minnesota Department of Human Services results in the construction of a 11,000-square-foot facility, in which each entity continues to have their own staff, dedicated treatment spaces, and separate entrances. Reduced costs and increased capacity for both organizations result from sharing state-of-the-art imaging, lab space, sterilization equipment and other expenses.
2020	With the outbreak of the COVID-19 pandemic, executive orders strictly limited routine dental care. 35% of our staff continued to provide urgent dental care services while 65% were temporarily furloughed. By December 2020, 95% of furloughed staff had returned to work. In accordance with evolving information, Apple Tree created new workflows, modified clinic spaces, and increased direct patient teledentistry to optimize the use of PPE, maintain physical distancing, and reduce aerosols that transmit COVID-19 infections. For example, the Extraoral Suction Devices purchased for use in clinic operatories, which were also added to the set of equipment comprising our Mobile Dental Offices.

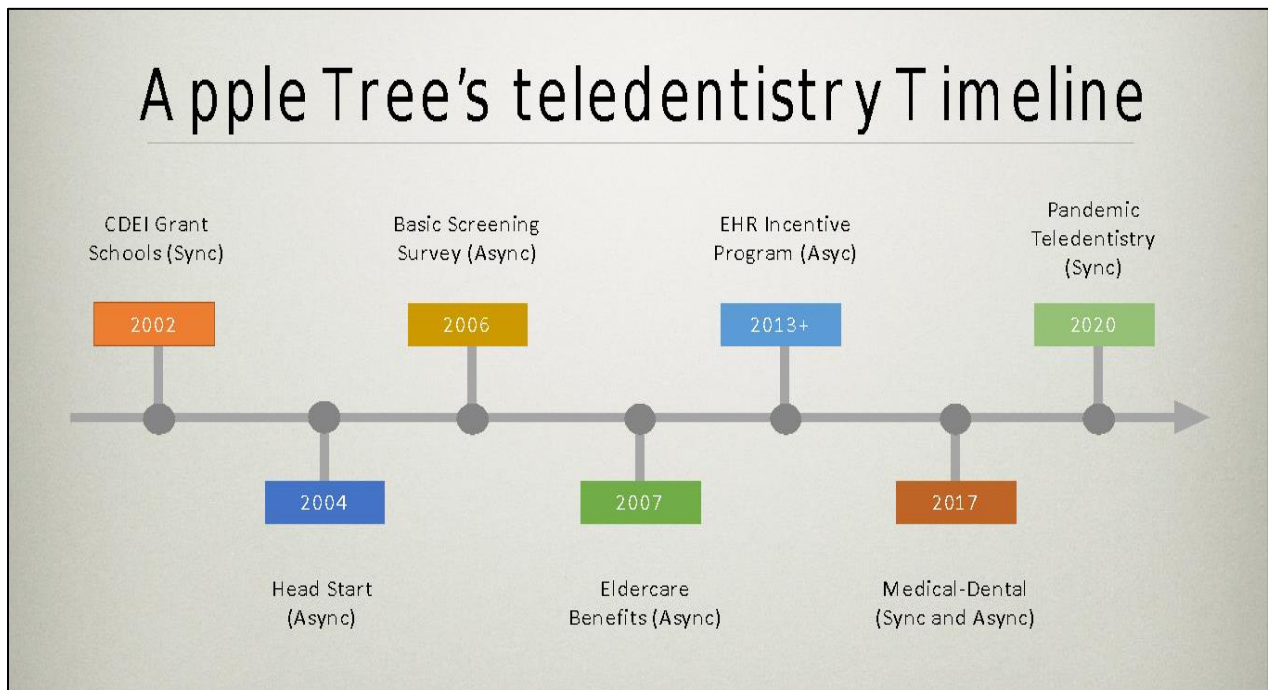
Milestones in Policy and Practice

Apple Tree has sought to increase the reach, efficiency, and effectiveness of the dental team through **workforce expansion, integrated care, and inter-professional collaboration**. The Community Collaborative Practice model engages family members, long-term care facility staff and caregivers, medical providers, and other non-dental personnel as members of the care team for its patients.

- In 1999, Apple Tree Dental advocated for the establishment of Collaborative Practice for dental hygienists in Minnesota. Collaborative Practice dental hygienists are an essential part of the care team providing oral health screenings, preventive services, and education for patients, caregivers, and staff in long-term care settings. <https://www.normandale.edu/communitydentalhygiene>
- Apple Tree sought to find common ground in the contentious discussion of midlevel providers. In 2009, legislation was enacted authorizing the education and licensure of dental therapists and advanced dental therapists. Beginning with graduates of the first class in 2011, Apple Tree has employed dental therapists with 10 currently on our staff, serving patients of all ages.
- In August 2020, The Center for Workforce Studies in the School of Public Health at SUNY Albany, published *The Contributions of Dental Therapists and Advanced Dental Therapists in the Dental Centers of Apple Tree Dental in Minnesota*. Their research covering 10 years of data, highlights the safety of dental therapists and the favorable economics for Apple Tree. The full report can be downloaded from: <https://www.chwsny.org/our-work/reports-briefs/the-contributions-of-dental-therapists-and-advanced-dental-therapists-in-the-dental-centers-of-apple-tree-dental-in-minnesota/>
- With support from multiple Minnesota Department of Health Clinical Dental Education Innovation grants, Apple Tree has offered new learning experiences in partnership with the University of Minnesota School of Dentistry, Minnesota State Colleges and Universities and other dental education programs. Dental, dental therapy, dental hygiene, dental assisting, and nursing students have experienced interprofessional care for elders and children, oral health screening and assessment, safe patient handling, dental laboratory procedures, and the use of telehealth technologies.
- Apple Tree hosts NYU Langone residents, not only to help them build their clinical skills, but also to broaden their view of available dental career options. Exposure to our non-profit, mission-oriented practice may lead them to consider inter-professional practice that includes people of all ages and abilities including those with complex medical conditions or who are insured through Medicaid and Medicare. <https://www.lmcdental.org/programs/mn/apple-tree-dental/aegd>
- In Apple Tree's IV sedation program, certified registered nurse anesthetists (CRNA) and anesthesiologists team up with our pediatric, special needs, and general dentists to safely provide care for patients who require sedation to complete treatment. Providing IV sedation services in

outpatient facilities like our Centers for Dental Health is a significantly less expensive alternative to hospital-based general anesthesia. This program reduces care delays due to increasingly limited OR availability and allows less invasive treatment planning.

- In addition to Apple Tree’s mobile program co-locating services in a variety of settings, three of Apple Tree’s eight Centers for Dental Health are located within rural health facilities: the Madelia Community Hospital in Madelia, CHI St. Gabriel’s Health Family Medical Center in Little Falls, and the Mayo Clinic Health System in Fairmont.
- Teledentistry –In 2020, Executive Orders under the COVID-19 pandemic required dental clinics across Minnesota to limit dental care to urgent cases only. Apple Tree expanded the use of Teledentistry supported triage, which allowed patients to connect with their dentist while preserving PPE and limiting the risk of disease transmission for patients and staff. This was particularly appreciated by patients residing in LTC settings with C-19 restrictions in place, those with compromised immune systems or other medical reasons, and when the dental concern could be resolved without an in-person appointment. The expanded use of Teledentistry and other pandemic-driven changes will be maintained into the future to better and more efficiently serve our patients.



Apple Tree has partnered with researchers and served on numerous committees and coalitions, in support of data-driven advocacy for changes to public program reimbursement and benefits administration that will improve access for older adults and other under-served population groups:

- Dr. Helgeson served as president of the Special Care Dentistry Association from 2004-2006. Federal legislation H.F. 4624, also known as the Special Care Dentistry Act, was introduced to reduce the growth of Medicaid and Medicare expenditures by providing medically necessary coverage for special care dentistry services for the nation’s most vulnerable adults and elders.
- Beginning in 2010, the Medicaid provision for “Incurred Medical Expenses” was used to finance dental care provided to nursing facility residents in Minnesota. Dr. Helgeson drafted fact sheets used by the American Dental Association to provide background and guidance for dental providers and participated in national webinars regarding this policy.
- Apple Tree’s policy director and paid lobbyists work with the board of directors and leadership to monitor and help influence oral health policy including public program reimbursement. Leadership offers testimony in nearly every legislative session. Examples of favorable outcomes achieved in collaboration with other state dental organizations, associations and coalitions include funding for dental access grants, creation of a Critical Access Dental Provider program, restoration of specific services for people with special needs when adult benefits were cut, and inclusion in pandemic relief programs.
- In May 2020, 15 years after “What predicts oral health stability in a long-term care population?” authored by Dr. Barbara J. Smith, Apple Tree co-founder and current Board member, was

published in the Journal Special Care in Dentistry, “Longitudinal analysis of cost and dental utilization patterns for older adults in outpatient and long-term care settings in Minnesota” was published. Both analyzed Apple Tree data to study the cost and dental utilization patterns for older adults in outpatient and long-term care settings. The first was based on Dr. Smith’s PhD research. The latter, by the West Health Institute, found that the costs of providing comprehensive dental care to older adults in long-term care settings were “modest and declined over time,” which suggests that policymakers should address the oral health needs of these older adults, and consider adding coverage for comprehensive dental care to future policies. The article is available in its entirety at: <http://journals.plos.org/>

- Prior to the 2021 legislative session, Dr. Helgeson analyzed three years of Minnesota Department of Human Services dental data. The analysis reveals the significant contributions of the Critical Access Dental Provider Program and has influenced discussion of program improvements with the Department, multiple managed care organizations, and with State legislators. <https://youtu.be/1XIVRPjChac>
- In February 2021, a donor-funded documentary, “Uncovered: Minnesota’s Dental Crisis” aired on Twin Cities Public Television. This 26-minute film highlights the innovative approaches of Critical Access Providers, including Apple Tree, as solutions for increasing access to dental care in Minnesota’s public programs. Uncovered can be viewed at: <https://www.tpt.org/uncovered-minnesotas-dental-crisis/>

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.)

Staff and Volunteers

Apple Tree employs unique workforce teams that include dentists, oral surgeons, nurse anesthetists, advanced dental therapists, dental hygienists, dental assistants, community care coordinators, and lab technicians. As of early 2021, Apple Tree has approximately 205 employees. The vast majority (approximately 2/3) are clinicians: 32 dentists including two full time residents, 10 advanced/dental therapists, 22 dental hygienists, and 65 dental assistants. An in-house dental laboratory with six technicians reduces the costs to fabricate partials and dentures. Four truck drivers deliver Mobile Dental Offices. Community care coordinators schedule the Mobile Dental Offices and the dental team at contracted facilities. Clinic care coordinators function more like traditional dental office staff and schedule appointments at the Centers. All coordinators ensure that the patient’s treatment plan is authorized and any needed medical consultations occur in advance of the appointment. Business office staff includes a finance manager, billing and collections specialists, and office managers. Apple Tree’s 17-member leadership team has expertise in human resources, information systems, program planning, management and evaluation, fundraising, finance and administration, implementing internal and external education programs, and promoting policy development and dental access legislation.

A volunteer Board of Directors (“Board”) leads Apple Tree, adding expertise in health care administration and research, dentistry, public policy, non-profit governance, early childhood development, and epidemiology. The Board is responsible for strategic planning to meet the organization’s mission.

The founders’ vision included creation of viable career tracks for dental professionals wishing to serve geriatric patients. Although innumerable volunteers contribute to its mission through special events, Apple Tree’s staff members are paid employees of the organization.

Funding

Due to high levels of uncompensated care associated with Medicaid and uninsured populations, Apple Tree has developed multiple, diversified funding streams to support a sustainable business model. Earned revenue from dental services, including insured and full-pay patients of all ages, is supplemented with federal, state, and local foundation grants, corporate support, individual gifts, and, increasingly in recent years from consulting services.

Partnerships and collaboration

As described above, Apple Tree collaborates with many partners in the delivery of dental services. Each new program has been stimulated by community leadership and supported by local donors and organizations working together from needs assessment through program development, fundraising, and growth. In addition to its clinical programs, Apple Tree's leadership recognizes the strategic importance of oral health policy development and has continually invested organizational resources at the local, state, and national levels. Apple Tree's "Innovations Center" includes communications, development, research, and policy functions. Important collaborations have included the Minnesota Departments of Health and of Human Services, the Minnesota Board of Dentistry, state legislators, state and regional oral health coalitions, dental professional associations including the American Dental Association, Special Care Dentistry Association, and the Minnesota Dental, Dental Therapy, and Dental Hygiene Associations, patient advocacy groups, and researchers including the Rochester Epidemiology Project, West Health Institute, Center for Health Workforce Studies. Grant funded projects have allowed Apple Tree to pilot Teledentistry, Silver Diamine Fluoride, and other promising practices, and supported interdisciplinary educational experiences.

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

Inspired by the Mayo Clinic's non-profit group medical practice model, Apple Tree was founded as a non-profit group dental practice in 1985. Apple Tree's interdisciplinary clinical teams are supported by corporate staff including a three-member executive team (CEO, CFO, and COO), Human Resources, Finance, Information Technology, Marketing and Development, Communications, and Policy. In addition, each local program has its own administrative staff including Center director, office manager, and clinic and community care coordinators to support the clinical teams.

Operations and Services

Apple Tree uses both lightweight portable equipment and its heavier-duty Mobile Dental Offices (customized units with full restorative and surgical capability) to provide on-site care in shared spaces within long-term care facilities and other community settings. Portable dental units are transported in a car or minivan and used by dental hygienists to provide preventive services. Specially designed trucks can transport multiple complete Mobile Dental Offices. In a carefully planned route, staff truck drivers pick-up and drop-off one or more complete Mobile Dental Offices at each scheduled location in the afternoon and evening, outside of normal business hours. On-site dental care teams provide dental care at each location for one or more days according to the number of patients due to be seen.

The Apple Tree Mobile Dental Office is nearly identical ergonomically and functionally to the equipment in Apple Tree's Centers. One difference is that the dental chair and other units are on wheels so they can be spread out, making it easier to safely transfer patients to and from wheelchairs. Dental treatment may also be provided at a Center, where operatories are designed to accommodate wheelchairs, have specialized lifts to transfer patients into the dental chair, and are equipped for sedation if required for a successful visit.

In 2001, Apple Tree updated oral health agreements with each contracted organization to become the Dental Director rather than simply a consulting dentist. The Dental Director role is parallel to the Medical Director's already established role in nursing facilities working closely with nursing facility staff to establish programs and processes that help ensure that every resident's oral health needs are met. Oral health agreement elements include:

1. All residents have a dental screening upon admission and at least annually in accordance with federal resident assessment requirements.
2. All residents have a written daily mouth care plan developed by a registered dental hygienist and that plan becomes part of the resident's overall patient care plan.
3. The Dental Director establishes oral health policies at each nursing facility.

Apple Tree’s on-site dental hygienist is responsible for completing the oral health portions of the mandated Minimum Data Set (MDS). In addition, the dental hygienist develops a personalized Daily Mouth Care plan for each new resident, coaches facility caregivers on how to care for resident’s teeth and dentures, triages residents needing follow-up care, and provides periodic in-service education for the facility’s staff.

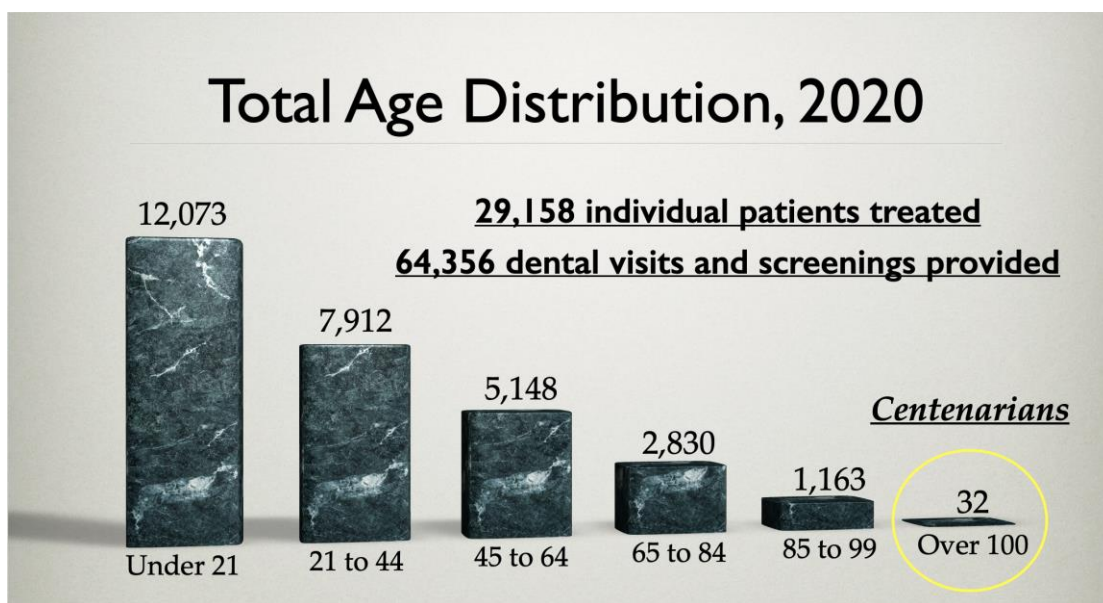
For nursing facility residents choosing Apple Tree as their dental provider, community care coordinators on staff at Apple Tree take all necessary steps to obtain consent for treatment from the responsible party, facilitate and document needed medical-dental consultations, and schedule on-site dental appointments for treatment. On-site dental treatment is scheduled on a regular basis throughout the year by a consistent team ensuring timely care and strong patient-provider relationships. When residents have extensive disease or special needs, they may also be scheduled at a nearby Apple Tree Center. On-call dentists respond, initially by phone, to emergency situations to triage the care needed with appropriate follow up either on-site or at the Center. These multiple points of accessible care are seamlessly linked via a fully certified Electronic Health Record (EHR).

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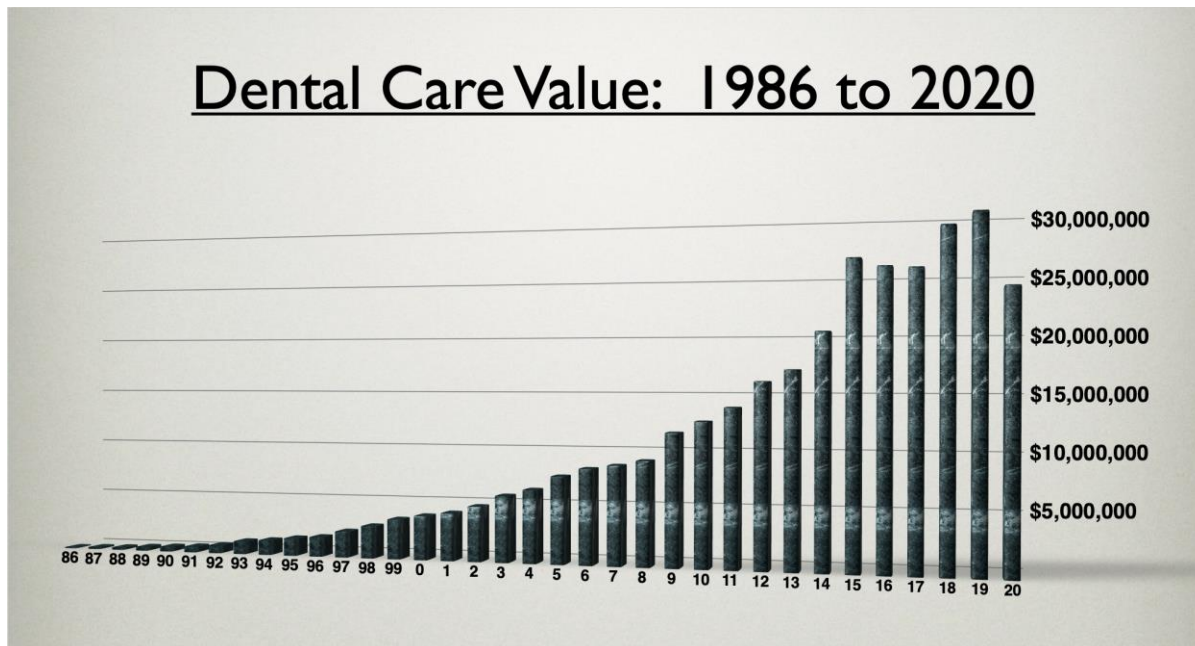
3. What outputs or direct products resulted from program activities? (e.g., number of clients served, number of services units delivered, products developed, accomplishments, etc.)

As of 2021, Apple Tree has eight Centers for Dental Health in Minnesota and provides dental services at approximately 140 community sites utilizing portable and mobile equipment. Pandemic-related restrictions impacted the total amount of care provided in 2020, resulting in fewer patients and visits over 2019 which was a more typical year of continued growth.

Apple Tree Dental Programs	Total 2019	Total 2020	% Difference
Patients	35,587	29,158	-18.1%
Visits	89,687	64,356	-28.2%
% MN Health Care Programs	81.7%	82.5%	0.8%
Screenings	8,115	2,634	-67.5%
Visits and Screenings	97,802	66,990	-31.5%



The value of dental services delivered in 2019 exceeded \$31 million and was just under \$24 million in 2020. Over 35 years, more than 1.4 million dental visits and \$335 million in services have been delivered.



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)

Apple Tree has created a sustainable system of care for people of all ages. Patients are not excluded by insurance status, age, or ability. The result is a lifelong dental home from which one does not age out, earn out, or become ineligible due to changes in insurance status.

In addition to providing high quality comprehensive dental care, Apple Tree has partnered with other dental stakeholders, patient advocates, and government agencies to influence the accessibility of dental care for older adults. Examples include:

- Establishment as a non-profit dental organization to diversify revenue and increase its ability to serve patients regardless of their insurance or financial status.
- Development of Mobile Dental Offices capable of providing comprehensive care on-site in nursing facilities.
- Co-location of services within health care facilities, including rural hospitals and clinics.

Since inception, Apple Tree has maintained a robust database of patient information as a resource for researchers interested in studying the impact of oral health care delivery on a target population. In addition to collecting the typical demographic and dental treatment data, Apple Tree utilizes dental and medical diagnostic codes (currently ICD-10 codes). This unique database provides valuable information about the patients and outcomes of care. Examples include:

- In the early years of Apple Tree, 60% of nursing facility patients were edentulous; currently, less than 40% of the patients are edentulous and over 60% of patients have one or more teeth.
- Apple Tree's average nursing facility patient is 85 years old.

- Dentate adults in the nursing facility program with three or more courses of care resulted in 54% of the patients being deemed dentally stable – meaning that they were in a status that required only routine preventive dental care at the time of assessment.

Data for evaluating programs and services is gathered in multiple ways. In addition to the patient database, satisfaction surveys are offered in Centers and at community sites. Results are shared with staff and funders. In nursing facilities, only about one in four patients make their own health care decisions so focus groups have been held with those responsible for their care. Results indicate a high level of satisfaction by patients, responsible parties, and facility administrators. Grant reporting also provides data on progress towards mission-related goals.

Budgetary Information:

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

1. What is the annual budget for this activity?

In 2020, Apple Tree's gross revenue and support totaled more than \$37 million, predominantly earned revenue from patient care. Because more than 80% of patients are insured by public programs and Minnesota's public program reimbursement rates are amongst the lowest in the nation, net revenue was \$22,280,702. Nearly \$2 million was from grants and other non-patient care sources.

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

In 2020, total expenses were \$20,917,337. Expenses are predominantly program expenses with the largest category being salaries and benefits of employees. Management and fundraising expenses remain extremely low.

3. How is the activity funded?

As described above, Apple Tree has developed multiple funding streams to support a sustainable business model. Earned revenue from dental services, primarily publicly programs, with less than 20% commercial insurance and full-pay patients, is supplemented with federal, state, and local foundation grants, corporate support, individual gifts, and, more recently, consulting services and research partnerships.

4. What is the plan for sustainability?

Apple Tree's 35 years of program growth is evidence of its sustainability. In addition to continuing to leverage partnerships and engage local support, new opportunities for earned revenue have emerged from our cumulative expertise and assets. Examples include increasing opportunities to leverage resources through partnerships, requests for consulting services to share lessons learned, research collaborations utilizing Apple Tree's unique longitudinal database, and diversifying the philanthropic sectors through which funding is sought.

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?

Apple Tree celebrated its 35th year of operation on July 3, 2020, amid the COVID-19 pandemic. It has grown to be a significant provider of comprehensive dental care in Minnesota and has been recognized as a model program for overcoming barriers faced by underserved populations, including older adults, in partnership with local leaders and community organizations. Apple Tree's history of innovation and collaboration proved invaluable to its pandemic response.

Lessons learned over 35 years include:

- The importance of a well-defined mission and shared values statement that supports both patients and providers. Mission and values provide a foundation to develop and maintain strategic partnerships with both public and private entities.
- Dental expertise is not enough. Expertise and systems in marketing and communications, development, finance, human resources, and information technology systems are needed and require investment of time and resources.
- “Cookie cutter” replication is not possible. A successful program must be tailored to local needs and resources and take into account state-specific licensure and regulations. Highly specific local data is essential to launch a new program and for ongoing program evaluation.
- Community engagement is essential at all phases of a program from needs assessment, planning, fundraising, growth and evaluation.
- Effective public policy requires investment in paid representation at the state capitol and of leadership's time as well as building trusted relationships with community stakeholders within and beyond dentistry.
- Public health care programs (Medicaid, etc.) can be administratively burdensome and have not prioritized adults or the needs of vulnerable adults.
- Diversify sources of grant and gift income, avoiding reliance on a few funders. Under promise and over produce on grants.
- An interdisciplinary team is required to deliver clinical care for older adults with complex needs.
- A non-profit staff model organization with paid dental professional employees allows them to provide the same standard of care regardless of the payer.
- Although successful programs grow over time, in order to have sufficient capacity to generate earned revenue and sustain a team of staff members, start big enough to make an impact.
- Recruit and retain mission-focused leadership at the Board and staff levels to manage the complexities of establishing and sustaining a dental care delivery system for nursing facility residents. The expertise needed goes well beyond understanding geriatric clinical needs.
- Value and reward innovation by creating a culture that welcomes adaptation and change.

2. What challenges did the activity encounter and how were those addressed?

Various challenges have arisen and been overcome during the past 35 years. For example, workforce shortages, inability to compete with private practice salaries, state budget deficits leading to benefit or reimbursement cuts, and the chronic underfunding and undervaluation of oral health. Apple Tree has benefitted from the strategic guidance of its board of directors, leveraged resources, collaboration with others, and innovative thinking. Dr. Helgeson often cites sage advice from Pete Frechette, former chairman and CEO of Patterson Companies, as helping guide him through difficult times: “Your bottom line should never be your goal.” Instead, Apple Tree has pursued patients' best interest by delivering patient-centered dental care and advancing the system changes necessary to do so.

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.

An ongoing compilation of news, case studies, presentation materials, and publications about Apple Tree's work from 2015 to present can be found at: <https://www.appletreedental.org/news-resources/>

TO BE COMPLETED BY ASTDD	
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Associated BPAR:	Oral Health of Children, Adolescents and Adults with Special Health Care Needs; Oral Health in the Older Adult Population (Age 65 and older)
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