

Dental Public Health Activity Descriptive Report

Practice Number: 26006
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SECTION I: PRACTICE OVERVIEW		
Name of the Dental Public Health Activity: Apple Tree Dental		
<p>Public Health Functions: Assessment – Acquiring Data Assessment – Use of Data Policy Development – Collaboration and Partnership for Planning and Integration Assurance – Population-based Interventions Assurance – Building Linkages and Partnerships for Interventions Assurance – Building State and Community Capacity for Interventions Assurance - Access to Care and Health System Interventions Assurance – Program Evaluation for Outcomes and Quality Management</p>		
<p>Healthy People 2020 Objectives: OH-1 Reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth OH-2 Reduce the proportion of children and adolescents with untreated dental decay OH-3 Reduce the proportion of adults with untreated dental decay 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 OH-7 Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year OH-8 Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year OH-12 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</p>		
State: MN	Federal Region:	Key Words for Searches: Adult dental care; children’s dental care; eldercare; seniors; older adults; geriatric dentistry; special care dentistry; persons with disabilities; Apple Tree Dental; mobile dentistry, on-site dental care; community collaborative practice; dental hygienists; public health supervision; restorative functions; expanded function assistants; dental therapists; portable dentistry; nursing home; nursing facility; skilled nursing facility; assisted living; group home; Head Start; schools; oral health; non-profit dental organization; staff model; inter-professional; triple aim; total cost of care.
<p>Abstract: Apple Tree Dental is a non-profit group dental practice founded in 1985. Initially addressing the unmet dental needs of individuals living in long-term care settings in Minnesota, Apple Tree now serves people of all ages and abilities. The mission of Apple Tree is to improve the oral health of all people, including those with special access needs, who face barriers to care. Apple Tree’s staff works to achieve its mission by delivering education, prevention, and restorative dental services to vulnerable populations and by providing leadership and innovation to transform the health care system.</p> <p>Apple Tree’s delivery system goal is to reach at-risk individuals while they are still healthy and help them maintain their oral health. Apple Tree’s on-site services can be delivered at a wide variety of</p>		

community sites within a 60 mile / 60 minute travel time radius of each Center for Dental Health (fixed clinic and office functions). Community partnerships allow Apple Tree to co-locate on-site dental services within long-term care facilities and other settings where people live, learn, and receive other health and social services. Sometimes described as a “hub and spoke” delivery system, the model creates an accessible care network linked via a fully certified Electronic Health Record and allows multiple points of accessible care for patients and communities.

Apple Tree uses a two-fold approach for long-term care residents. As the contracted Dental Director for a long-term care facility, Apple Tree assists the facility with mandated oral health requirements for all residents, such as the Minimum Data Set, dental emergency coverage, and staff training. For those residents choosing Apple Tree as their dental provider, community care coordinators assist patients and their caregivers to facilitate comprehensive dental care on-site or at the nearest Apple Tree Center for Dental Health.

In its first 30 years, Apple Tree’s five regional programs in Minnesota have delivered 966,500 dental visits and collaborative practice screenings in partnership with approximately 170 collaborating nursing facilities, assisted living centers, Head Start centers, schools, and other sites. More than a third of this care has been provided to nursing facility residents and other older adults. By 2015, the total was over \$170 million worth of dental care.

Apple Tree shares its expertise in geriatric and special care dentistry with educational institutions, researchers, and policymakers. Dental, dental hygiene, advanced/dental therapy, nursing students, and faculty have had rotations at Apple Tree. Apple Tree’s longitudinal database that includes records for more than 30,000 nursing facility residents has been used by researchers. Apple Tree has played a key role in important dental access legislation in Minnesota and has been actively involved in the formation and leadership of local and statewide coalitions. Nationally, the sustained success of Apple Tree’s programs have been recognized by the American Dental Association, the Surgeon General, the Robert Wood Johnson Foundation, the Kellogg Foundation, and other leading health care organizations.

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SECTION II: PRACTICE DESCRIPTION

History of the Practice:

Formation

In 1984, a private, non-profit model to address the unmet dental needs of nursing facilities residents was conceptualized and founded by dental school classmates Dr. Michael Helgeson and Dr. Michael Gavino, Barbara Smith, RDH, MPH, PhD and Dr. George Goldhammer. In 1985, after 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. At the time of formation, the only non-profit dental practices in Minnesota were the School of Dentistry, Hennepin County Medical Center and dental programs within larger organizations such as the Federally Qualified Health Centers. 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 its sustainability.

Growth

From 1986-1993, Apple Tree provided dental services exclusively utilizing mobile dental equipment. Apple Tree’s continuous growth and diversification have been in direct response to local community

needs. As described below and under lessons learned, each milestone was possible because of the involvement of community champions and local financial support. Milestones include:

1994	Apple Tree opened its first outpatient dental clinic and laboratory in the Twin Cities to augment the services being provided through the mobile program.
1996	Creation of the first replication program Carolina's Mobile Dentistry in Charlotte, NC. Subsequently, Apple Tree helped establish two additional replications: Access Dental Care in Greensborough, NC and Operation Smile in Sicily Island, LA. Apple Tree provided expertise, information systems and Mobile Dental Offices to local leaders with their own target patient population and funding sources.
1997	Apple Tree opens its first rural practice in Hawley in Northwestern Minnesota serving the Red River Valley and eastern North Dakota. The mayor and other leaders recognized the lack of dentists accepting Medicaid in the region and identified local resources to help support Apple Tree. In addition to residents of long-term care, Head Start, low-income families and immigrant populations diversify the patient mix.
1999-2001	<p>Technology and equipment advances included conversion of Apple Tree's customized electronic health records systems (programmed 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 located within the hospital and also extends 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 by full-time staff 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 program opens in response to a request from physicians at the Mayo Clinic concerned about the lack of access to dental care for long-term care residents. An advisory group, which included the local dental community, contributed to a needs assessment prior to launch of a mobile program. 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. Local foundations and health plans contributed financial support for the needs assessment and opening of the clinic. Through a partnership with the West Central Initiative, the Hawley and Fergus Falls programs also provide on-site screening, prevention, and dental services at outreach sites across the region.
2011	IV sedation services for disabled adults begin in late 2010 in the twin cities, and expand significantly in 2011 to provide a safe and more cost-effective alternative to general anesthesia for patients with disabilities and behavioral challenges. Adding nurse anesthetists further diversifies the inter-professional care team.
2013	An outpatient clinic with IV sedation capabilities opens in Rochester and serves as the care coordination center for the existing regional mobile program.
2014	The Mounds View Center for Dental Health opens with a new outpatient clinic design, ceiling lifts for transferring patients and infrastructure for an ambulatory surgery center designed for interdisciplinary outpatient services for people with special needs.
2015	Following five years of planning efforts with local leaders, Apple Tree opened the San Mateo Center with more than \$3 million of grant support from the Peninsula Health Care and Sequoia Healthcare Districts.

Milestones in Policy and Practice

In addition to its clinical programs, Apple Tree's leadership recognized 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, 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 and Dental Hygiene Associations, patient advocacy groups, and local community leaders. Grant funded projects have allowed Apple Tree to pilot promising practices such as Teledentistry and support interdisciplinary educational experiences. 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.

Apple Tree has sought to increase the reach and effectiveness of the dental team through workforce expansion and increased 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.
- 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 dental therapists from the first graduating class in 2011, Apple Tree has employed six advanced/dental therapists who are now well integrated into Apple Tree's care teams.

To improve financing and access to dental care for older adults, Apple Tree has participated in state and national advocacy efforts:

- Apple Tree retains lobbyists to monitor dental legislation in Minnesota. Leadership offers testimony in nearly every legislative session. Examples of outcomes include funding for dental access grants, for a Critical Access Dental Provider program, and restoration of specific services for people with special needs after adult benefits were cut.
- 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. As a member of the American Dental Association's (ADA) National Elder Care Advisory Committee, Dr. Helgeson drafted fact sheets used to provide background and guidance for dental providers and participated in national webinars regarding this policy. <http://www.ada.org/en/member-center/member-benefits/practice-resources/paying-for-dental-care-a-how-to-guide-incurred-med/incurred-medical-expenses-suggested-steps-for-dental-professionals>

Justification of the Practice:

Apple Tree was founded to address the longstanding lack of access to dental care for residents of nursing and assisted living facilities. However, the barriers and 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.

Concern about access to care for vulnerable adults has grown along with an aging population. According to Healthy People 2020, oral health is one of the top nine health indicators needing improvement for older adults' health. 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 30 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 (see Outcomes for details) revealed that routine care can successfully stabilize the oral health of institutionalized elders.

Inputs, Activities, Outputs and Outcomes of the Practice:

Inputs:

Staff and Volunteers

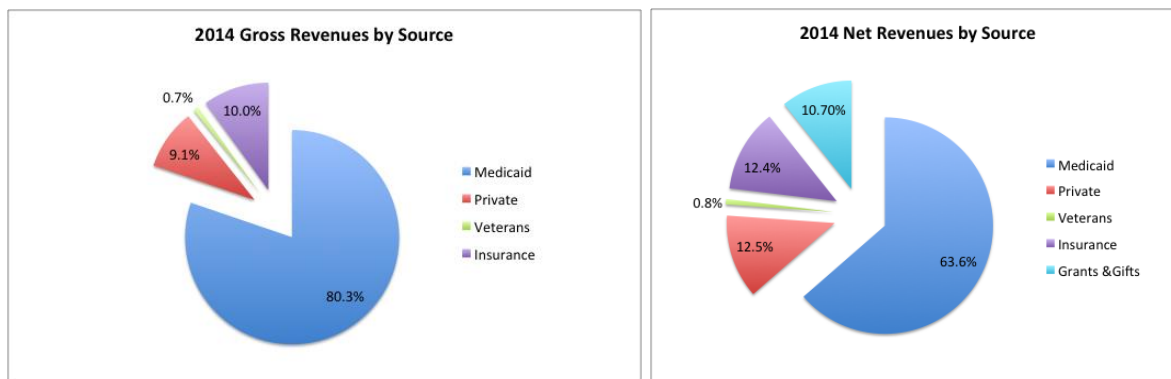
Apple Tree employs unique workforce teams that include dentists, oral surgeons, nurse anesthetists, advanced dental therapists, dental hygienists, dental assistants, community care coordinators, and lab technicians. As of May 2015, Apple Tree has approximately 200 employees. The vast majority (2/3) are clinicians including 37 dentists, six advanced/dental therapists, 31 dental hygienists, and 56 dental assistants. An in-house dental laboratory with seven technicians reduces the costs to fabricate partials and dentures. Seven 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 11-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 funding streams to support a sustainable business model. Earned revenue from dental services, including insured and full-pay patients, is supplemented with federal, state, and local foundation grants, corporate support, and individual gifts.



Activities:

Apple Tree uses both lightweight portable equipment and heavier 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:

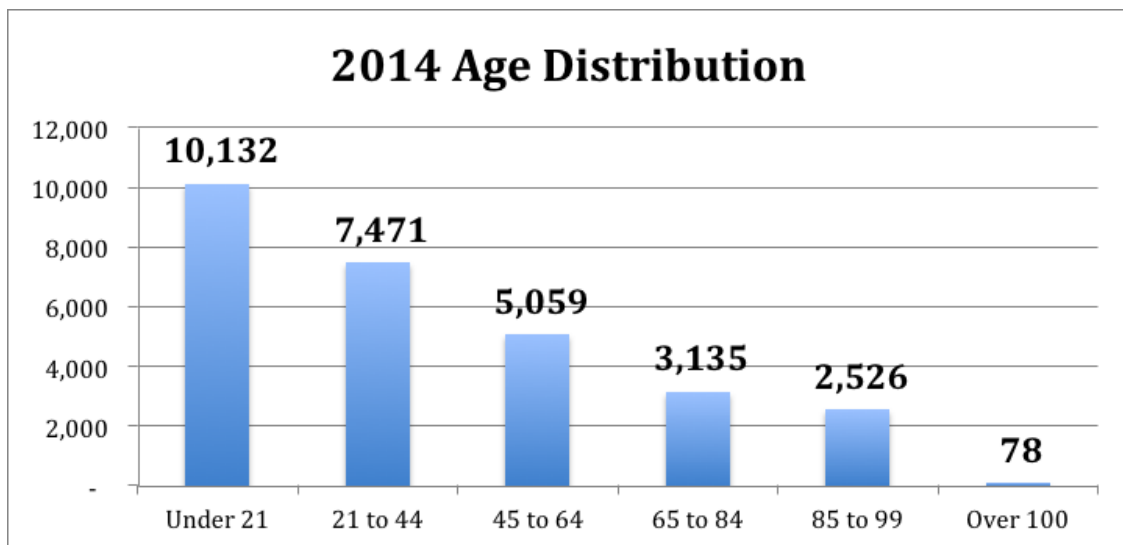
1. All residents have a dental screening upon admission and at least annually in accordance with federal resident assessment requirements.
2. All residents have a written daily mouth care plan developed by a registered dental hygienist and that plan becomes part of the resident’s overall patient care 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.

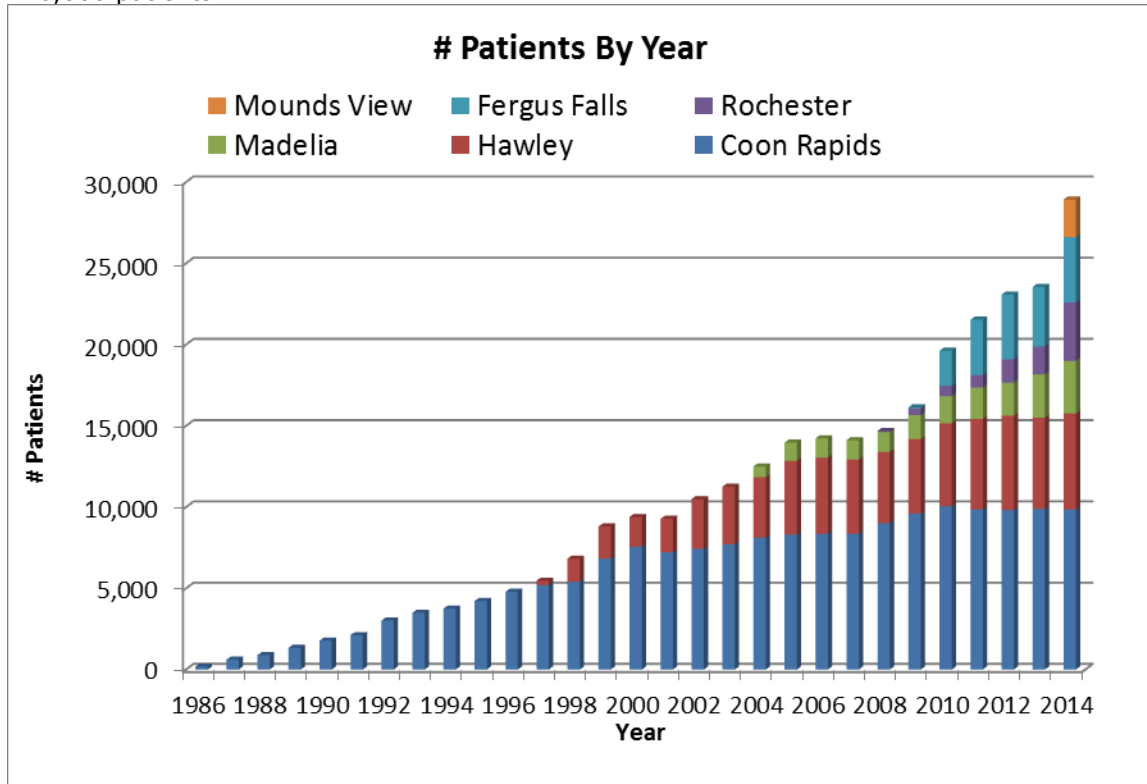
For nursing facility residents choosing Apple Tree as their dental provider, community care coordinators on staff at Apple Tree take all necessary steps to obtain consent for treatment from the responsible party, facilitate and document needed medical-dental consultations, and schedule on-site dental 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. These multiple points of accessible care are seamlessly linked via a fully certified Electronic Health Record (EHR).

Outputs:

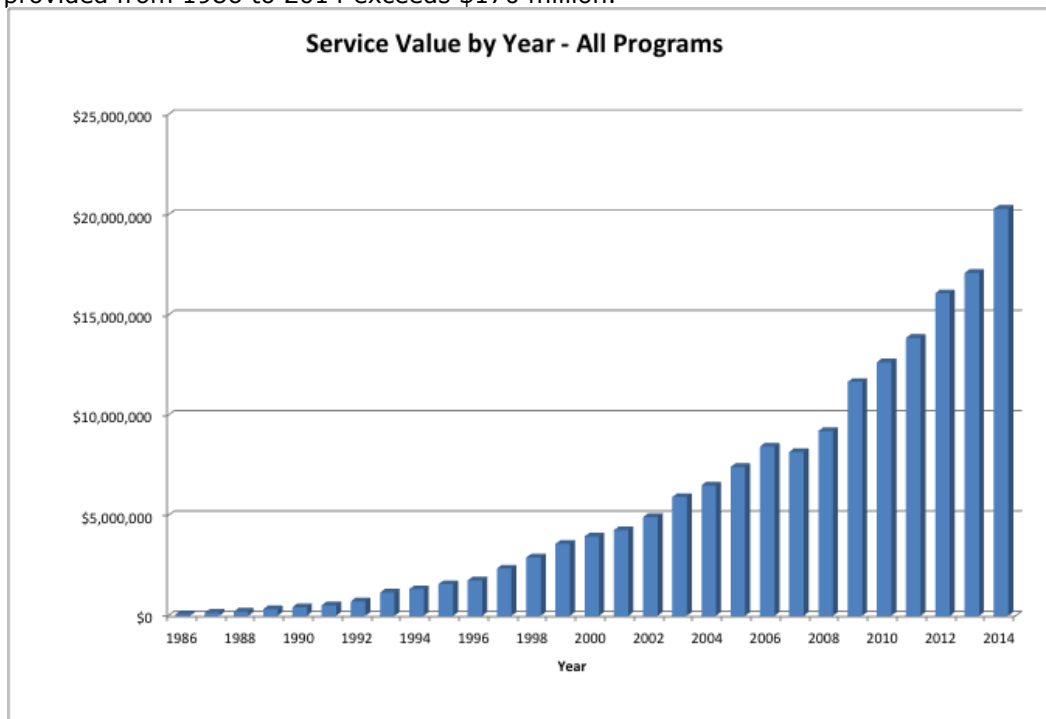
Apple Tree now has six Centers for Dental Health in Minnesota and provides dental services at approximately 140 community sites utilizing portable and mobile equipment. In 2014, Apple Tree provided nearly 80,000 dental visits and screenings for over 28,400 patients of all ages, including 5,739 patients aged 65 or older in Minnesota.



Over its 30-year history, Apple Tree has provided more than 966,500 visits and screenings for nearly 116,000 patients.



The value of dental services delivered in 2014 exceeded \$22 million. The cumulative total value of services provided from 1986 to 2014 exceeds \$170 million.



Outcomes:

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 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.

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-9 codes). This unique database provides valuable information about the patients and outcomes of care. Examples include:

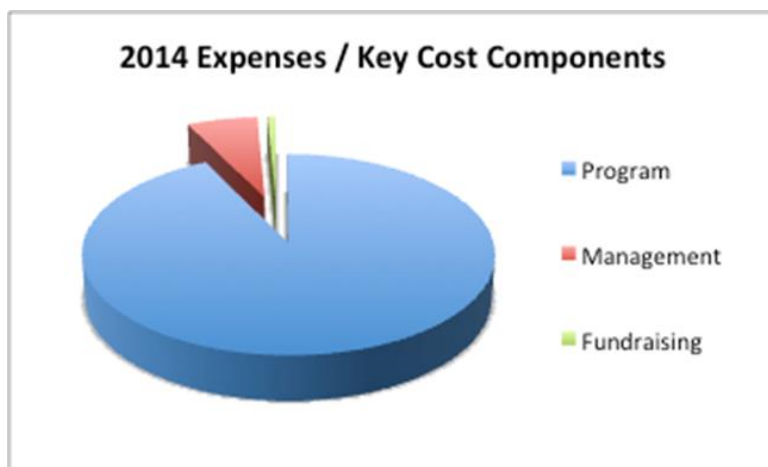
- In the early years of Apple Tree, 60% of nursing facility patients were edentulous; currently, less than 40% of the patients are edentulous and over 60% of patients have one or more teeth.
- Apple Tree's average nursing facility patient is 85 years old.
- Dentate adults in the nursing facility program 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 1 in 4 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.

Budget Estimates and Formulas of the Practice:

In 2014, Apple Tree's revenue and support totaled \$ 14,746,168, predominantly earned revenue from patient care. Including supplemental payments from Minnesota's Critical Access Dental Provider Program, Medical Assistance reimbursement was slightly more than 50% of billed charges. Other noteworthy revenue categories include \$1.6 million from grants and donations and nearly \$318,000 in meaningful use incentives for dental providers achievement of EHR standards.

In 2014, total expenses were \$14,252,171. 92.75% of the total was program expenses, predominantly salaries and benefits of employees. Management and fundraising expenses are extremely low at 6.5% and .8% respectively of total expenses.



Lessons Learned and/or Plans for Improvement:

Apple Tree celebrated its 30th year of operation on July 3, 2015. 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.

Lessons learned 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.
- Effective public policy requires investment in paid representation at the State Capitol and of leadership’s time.
- 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.

Available Information Resources:

Information and publications about Apple Tree and the community collaborative practice model include:

Website: www.appletreedental.org
Helgeson M, Glassman P. <i>Oral health delivery systems for older adults and people with disabilities</i> . 2013. <i>Spec Care Dentist</i> 33(4): 177-189, 2013.
Glassman P, Helgeson M, Kattlove J. <i>Using Telehealth Technologies to Improve Oral Health for Vulnerable and Underserved Populations</i> . <i>CDA Journal</i> : 2012: 40(7) 579-585.
Helgeson MJ. <i>The Minnesota Oral Health Care Solutions Project: Implications for People with Special Needs</i> . <i>CDA Journal</i> , Vol. 33, No. 8. August 2005: 641-649
Smith BJ, Shay K. <i>What Predicts Oral Health Stability in a Long-term Care Population?</i> <i>Journal of Special Care in Dentistry</i> , Volume 25, Number 3, 2005, May/June: 150-157
Helgeson MJ, Smith BJ, Johnsen MG, Ebert CW. <i>Frail Elderly Adults in Dental Care Considerations of Disadvantaged and Special Care Populations</i> 2001-491-191/43013 US GPO Reprints at www.SCDOnline.org
Watson EL, Hodges JS, Helgeson MJ, Smith BS. <i>Access to dental care for an institutionalized elderly population</i> . <i>J Dent Res</i> 77 (AADR Abstracts), 1998: 300
Thai PH, Shuman SK, Davidson GB. <i>Nurses’ dental assessments and subsequent care in Minnesota nursing homes</i> . <i>Journal of Special Care in Dentistry</i> , Volume 17, Number 1, 1997, July/August: 13-18
Helgeson MJ, Smith BJ. <i>Dental care in nursing homes: Guidelines for mobile and on-site care</i> . <i>Journal of Special Care in Dentistry</i> , Volume 16, Number 4, 1996, July/August: 153-164

The Center for Innovation at Apple Tree receives requests to implement the model in other areas of the country. The following considerations are used to evaluate requests for assistance:

- a. Does the request fit within Apple Tree’s mission and strategic priorities?
- b. Does Apple Tree have unique expertise that could help meet the request? Are there other organizations or resources that are better suited to assist?
- c. Does Apple Tree currently have the capacity to undertake the project at this time?

- d. Does the project support and sustain Apple Tree's other programs, or is it of such importance that it should be funded?

SECTION III: PRACTICE EVALUATION INFORMATION

Impact/Effectiveness

How has the practice demonstrated impact, applicability, and benefits to the oral health care and well-being of certain populations or communities (i.e., reference scientific evidence, outcomes of the practice and/or evaluation results)?

The most comprehensive analysis assessing tooth survival in a longitudinal analysis utilizing a "continuous cycles of care" approach revealed that the 54% of patients served through at least three courses of care through Apple Tree Dental's nursing facility efforts were deemed dentally stable. Dentally stable patients were found to be in a status that required only routine preventive dental care at the time of the assessment.¹

Efficiency

How has the practice demonstrated cost and resource efficiency where expenses are appropriate to benefits? How has the practice demonstrated realistic and reasonable staffing and time requirements? Provide unit cost analysis or cost-benefit analysis if appropriate.

For older adults in nursing and assisted living facilities, on-site services increase integration with other health services, and leverage existing facilities and staff resources. On-site care eliminates no-shows / failed appointments and allows residents to be seen within the context of other daily events such as physical therapy or group activities.

Apple Tree's on-site care delivery model significantly reduces the total cost of care when public and private spending on health services and other costs incurred to access those services are included. For example, transportation costs, including the cost of nursing staff time to accompany the patient to an office appointment, resident representative time-off work and travel, and medical transportation fees often exceed the total cost of the dental care provided. Even greater system savings are linked to preventing complications from untreated oral infections, including improved diabetes management, reduced rates of aspiration pneumonia, decreased nursing care costs related to infection induced behaviors, and reductions in emergency department visits and hospitalizations.

Demonstrated Sustainability

How has the practice showed sustainable benefits and/or how has the practice been sustainable within populations/communities and between states/territories? What mechanisms have been built into the practice to assure sustainability?

Due to high levels of uncompensated care associated with Medicaid and uninsured populations, Apple Tree has developed multiple funding streams to support a sustainable business model. Earned revenue, including insured and full-pay patients, is supplemented with federal, state, and local foundation grants, corporate support, and individual gifts. Apple Tree's non-profit status and delivery model keep ongoing operating gaps small and allows most fundraising efforts to support innovation and program expansion. Community Collaborative Practice staffing models allow services to be provided in shared spaces, leveraging community resources and eliminating transportation barriers.

Collaboration/Integration

How has the practice built effective partnerships/collaborations among various organizations and integrated oral health with other health projects and issues? What are the traditional, non-traditional, public and private partnerships/collaborations established by the practice for integration, effectiveness, efficiency and sustainability?

¹ What predicts oral health stability in a long-term care population? Spec Care Dentist. 2005 May-Jun;25(3):150-7. Smith BJ, Shay K

Apple Tree collaborates through formal relationships with approximately 140 urban and rural, non-profit and for-profit entities to deliver comprehensive dental care to patients across the lifespan. Examples include skilled nursing and assisted living facilities, group homes, Head Start centers, schools, and a mental health campus.

Contracts with nursing facilities include language establishing Apple Tree as the Dental Director for each specific nursing facility. Additionally, Apple Tree provides dental screenings to all residents regardless of whether or not Apple Tree will provide the follow-up care. The results of the screenings are used to develop daily written oral care plans that are integrated into each patient's overall patient care plan. Apple Tree staff members collaborate with nursing facility staff members to either provide the needed dental care or link residents to community-based dental providers, as appropriate.

Objectives/Rationale

How has the practice addressed HP 2020 objectives, met the National Call to Action to Promote Oral Health, and/or built basic infrastructure and capacity for state/territorial/community oral health programs?

Specific to Apple Tree's work with nursing facility residents, the following Healthy People 2020 objectives are addressed:

- OH-3 – Reduce the proportion of adults with untreated dental decay
- 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
- OH-7 – Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year
- OH-14 – Increase the proportion of adults who receive preventive interventions in dental offices

Apple Tree proactively screens all residents in the long-term care facilities at which it serves as the Dental Director. Oral health screenings by a dental professional upon admission and at least annually improves early identification of needs as well as availability of preventive and restorative care.

Public program patients often struggle to find a dentist who accepts Medicaid. Apple Tree provides dental care to patients of all ages including Minnesota Health Care Program enrollees. Apple Tree's model ensures that both community-dwelling and institutionalized high-risk adults receive preventive and comprehensive care.

Note: Although not the focus of this BPAR, Apple Tree serves patients of all ages and therefore also addresses Health People 2020 Objectives OH-1, 2, 8, 12.

Extent of Use Among States

Describe the extent of the practice or aspects of the practice used in other states?

Apple Tree operates regional programs in Minnesota and, beginning in 2015, in California. Three replication programs in North Carolina and Louisiana use the Apple Tree model as the foundation for their program.