1

Lyubov Slashcheva

Chief Transformation Officer, Research Director

Apple Tree Dental

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Agenda

- About Apple Tree Dental
  - Community Collaborative Practice
  - Innovations/Learning Health System
- Research
  - Infrastructure to support aging research
  - Data linkages/collaborations

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About Apple Tree Dental

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APPLE TREE DENTAL

Access • Compassion • Excellence

Apple Tree Dental 40 YEARS

OVERCOMING BARRIERS

A nonprofit, Critical Access Dental provider, founded in 1985

5

APPLE TREE DENTAL

Access • Compassion • Excellence

Our mission is to overcome barriers to oral health

Our vision is to foster partnerships that create healthy communities

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Apple Tree operates 10 Centers for Dental Health

and delivers mobile care at ~140 community sites serving:

- Low-income children and their families
- Adults with disabilities
- Seniors and elders in long-term care

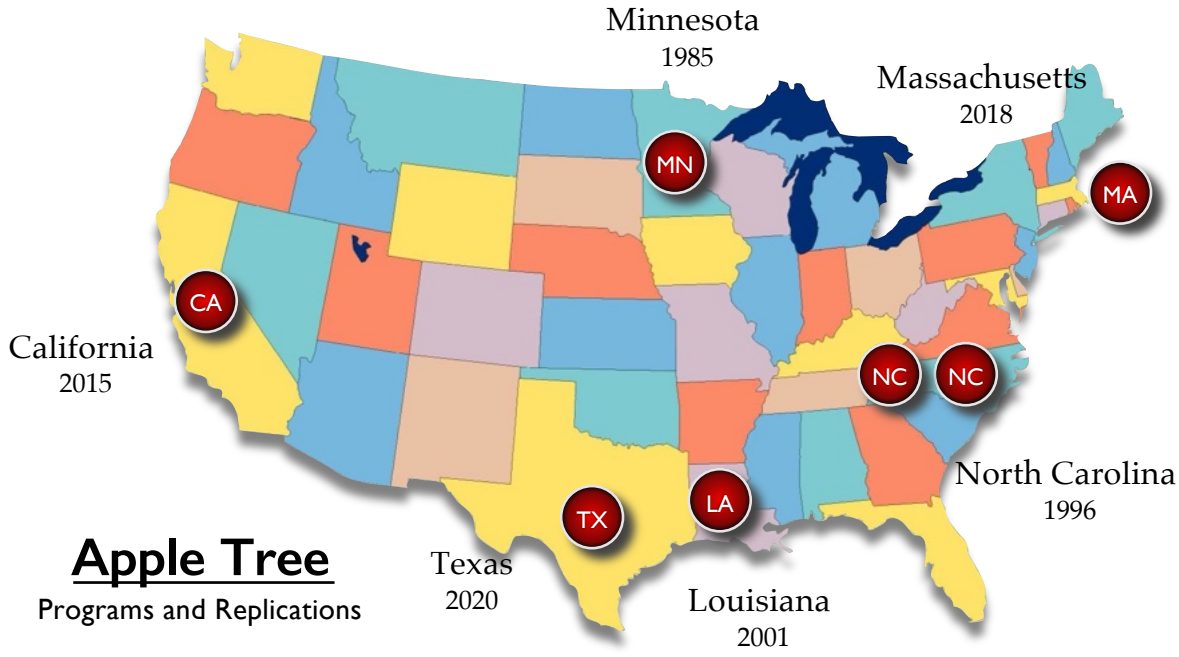
We serve patients from all 87 of Minnesota's counties

Dental Clinic Locations

www.appletreedental.org

1. New Brighton (1986)
2. Hawley (1997)
3. Rochester (2008)
4. Fergus Falls (2009)
5. Mounds View (2014)
6. Little Falls (2018)
7. Fairmont (2020)
8. St. Paul (2025)
9. Detroit Lakes Outreach Clinic (2025)
10. Mankato Outreach Clinic (2026)

7



Apple Tree

Programs and Replications

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Apple Tree's Community Collaborative Practice Model

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Community Collaborative Practice

- Fundamentally an interprofessional practice model
- Proactive oral health delivery to patients and communities with high needs
- Actively engaged with other health, education, and social services professionals
- Integrates dental care into health care homes

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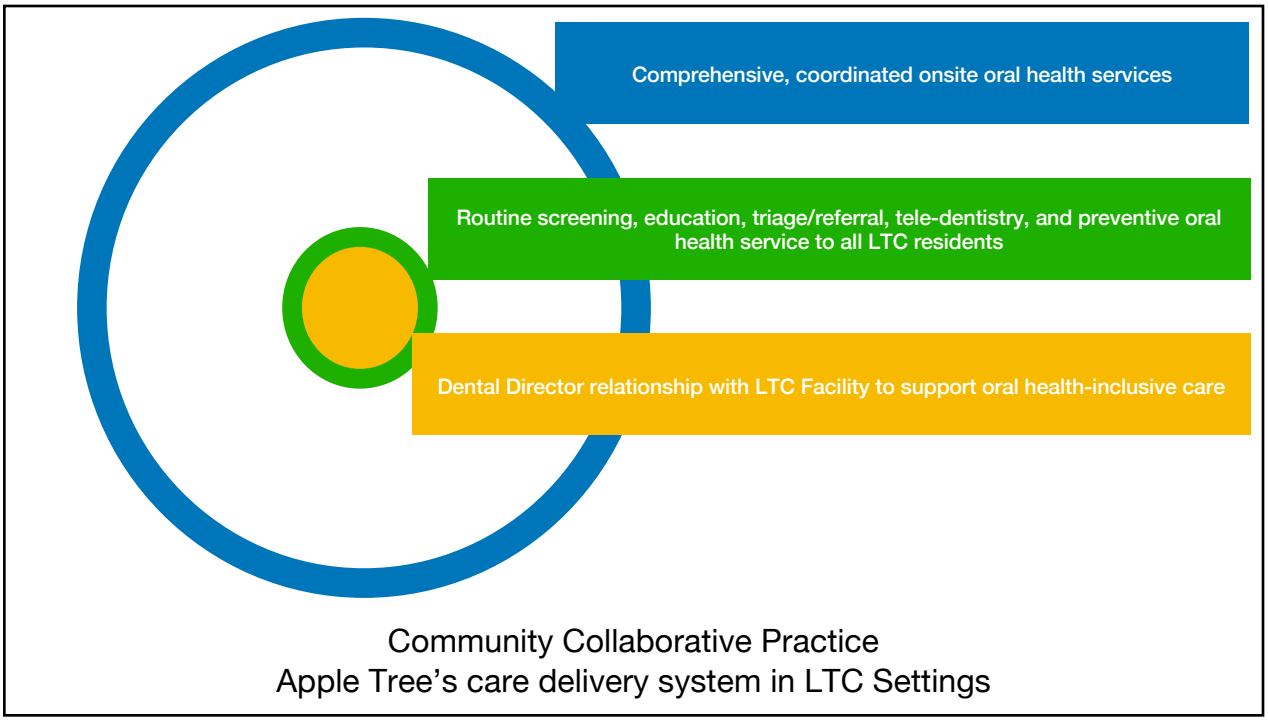

Community Collaborative Practice
Apple Tree's care delivery system in LTC Settings

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Our Innovations Teams

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14

Innovations Teams

6

- Clinical Innovations
- Education
- Research
- Advocacy
- Fundraising
- Public Relations

15

Apple Tree's Learning Health System

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Operating as an Equity-Focused LHS

- "The best interest of the patient is the only interest to be considered," Dr. William J. Mayo in 1910
- We believe our patient populations deserve the highest quality care and that the health system must be responsive to their needs.
- We seek to eliminate ageism, ableism, racism, and socio-economic barriers that persist in our oral health care delivery systems.

Research

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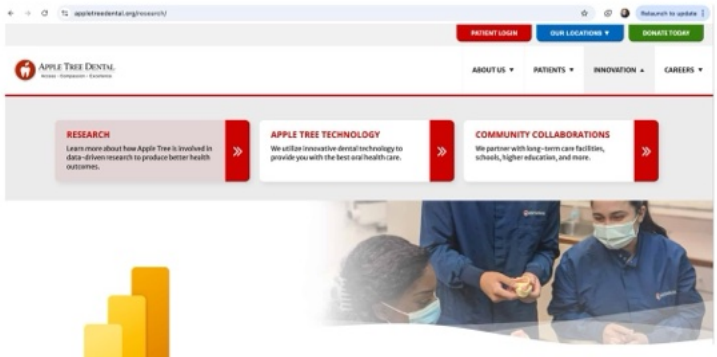
Research Infrastructure Development



Power BI

CareQuest Institute for Oral Health

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Research Strategic Plan 2023-2026

Research is essential to Apple Tree Dental's mission to overcome barriers to oral health and our vision of fostering partnerships that create healthy communities.

- **Objective:** Sustain and increase Apple Tree Dental's capacity to operate as a Learning Health System. Apply evidence and evaluation in engaging community partners in the design, implementation, and evaluation of programs and projects that support our advocacy for improving access to oral health and whole person care through integrated services and our Community Collaborative Practice.

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PhD in Epidemiology Dissertation

- Barbara Smith, RDH, MPH, PhD
  - University of Michigan
  - MN Department of Health

"Stability over time was achieved in 44% of the study group."

ORAL HEALTH STABILITY

ARTICLE

ABSTRACT

What predicts oral health stability in a long-term care population?

Barbara J Smith, RDH, MPH, PhD,[a] Kenneth Shay, DDS, MS[b]

Introduction

Methods

Sources of data

1

150 Spec Care Dentist 25(3) 2005 Predicting oral health stability in long-term care

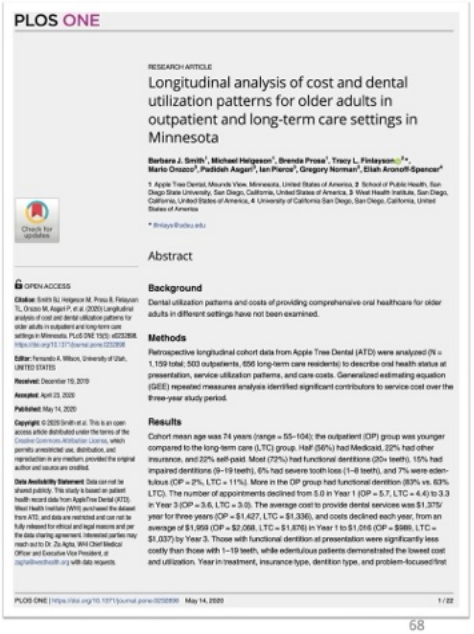
22

West Health Institute

Conclusions: **Costs** for providing comprehensive dental care in OP and LTC settings were **similar, modest, and declined over time. Care patterns shifted** over time to **increased preventive care** and **decreased restorative** care visits.

westhealth

west foundation | westhealth institute | westhealth policy center



PLOS ONE

RESEARCH ARTICLE

Longitudinal analysis of cost and dental utilization patterns for older adults in outpatient and long-term care settings in Minnesota

Abstract

Background

Methods

Results

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Workforce: Dental Therapy

- Case studies supported by the PEW Charitable Trust
  - An Advanced Dental Therapist in Long-Term Care (2018)
  - An Advanced Dental Therapist in Rural Minnesota (2018)
- Dental Therapy Evaluations by Center for Health Workforce Studies
  - The Contributions of Dental Therapists and Advanced Dental Therapists in the Dental Centers of Apple Tree Dental in Minnesota (2020)
  - Provider and Patient Satisfaction With the Dental Therapy Workforce at Apple Tree Dental (2022)

THE PEW CHARITABLE TRUSTS

CHWS Center for Health Workforce Studies

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Data Linkages/Collaborations

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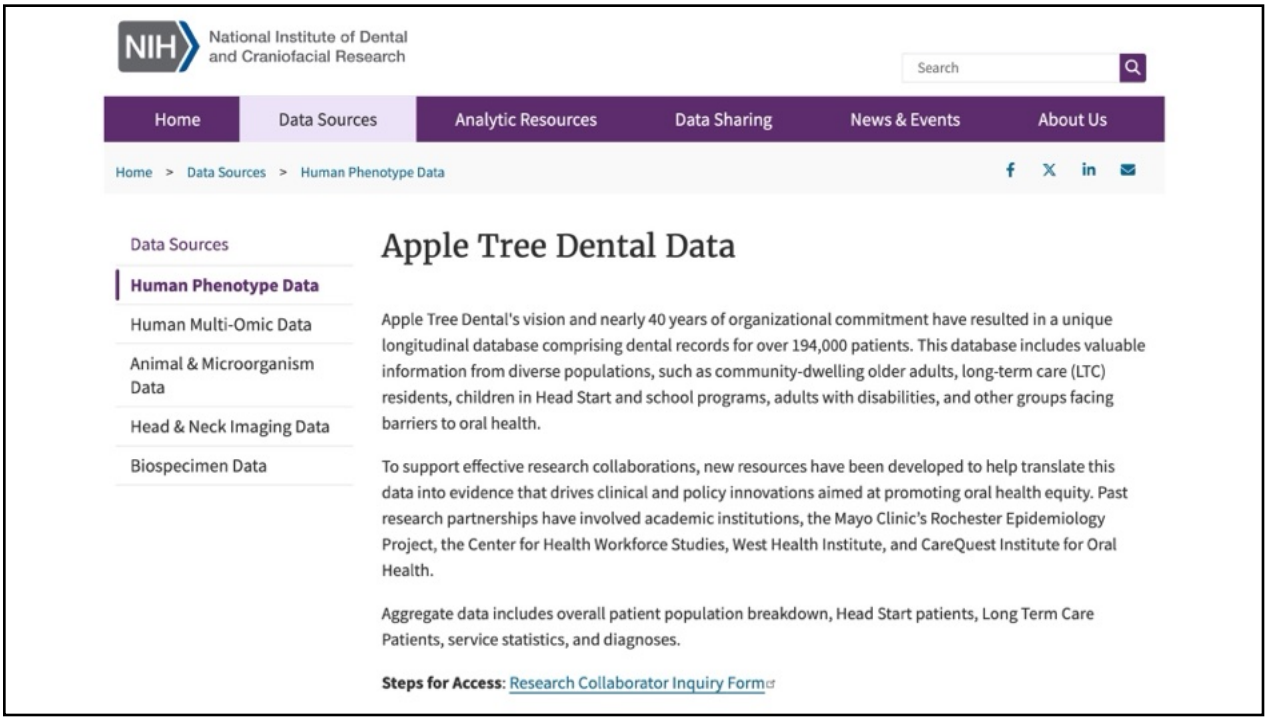
NIH
National Institute of Dental and Craniofacial Research
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News & Events
About Us
Home > Data Sources > Human Phenotype Data
Data Sources
Human Phenotype Data
Human Multi-Omic Data
Animal & Microorganism Data
Head & Neck Imaging Data
Biospecimen Data
Apple Tree Dental Data
Apple Tree Dental's vision and nearly 40 years of organizational commitment have resulted in a unique longitudinal database comprising dental records for over 194,000 patients. This database includes valuable information from diverse populations, such as community-dwelling older adults, long-term care (LTC) residents, children in Head Start and school programs, adults with disabilities, and other groups facing barriers to oral health.
To support effective research collaborations, new resources have been developed to help translate this data into evidence that drives clinical and policy innovations aimed at promoting oral health equity. Past research partnerships have involved academic institutions, the Mayo Clinic's Rochester Epidemiology Project, the Center for Health Workforce Studies, West Health Institute, and CareQuest Institute for Oral Health.
Aggregate data includes overall patient population breakdown, Head Start patients, Long Term Care Patients, service statistics, and diagnoses.
Steps for Access: Research Collaborator Inquiry Form

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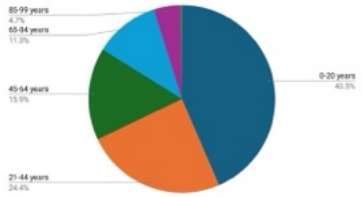
Data Types: Clinical dental chart data

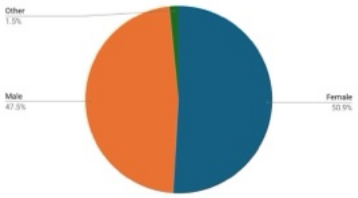
To view the charts listed below in more detail, please download the aggregate data.

Download Apple Tree Dental aggregate data | Visit Apple Tree's Website

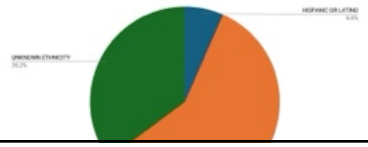
Apple Tree Dental Overall Age Distribution



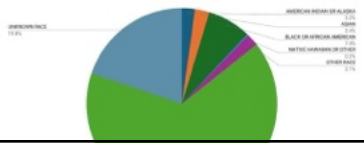
Apple Tree Dental Overall Sex Distribution



Apple Tree Dental Overall Ethnicity Distribution



Apple Tree Dental Overall Race Distribution



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Mayo Clinic

Rochester Epidemiology Project Collaboration

COUNTIES IN THE REP

"The REP allows the study of health and disease across the entire community, from birth to death, and from primary to specialty care."
– Barbara Yawn, MD, REP Co-Principal Investigator 2006-2015

ROCHESTER EPIDEMIOLOGY PROJECT EST. 1966

A Minnesota and Wisconsin Collaboration

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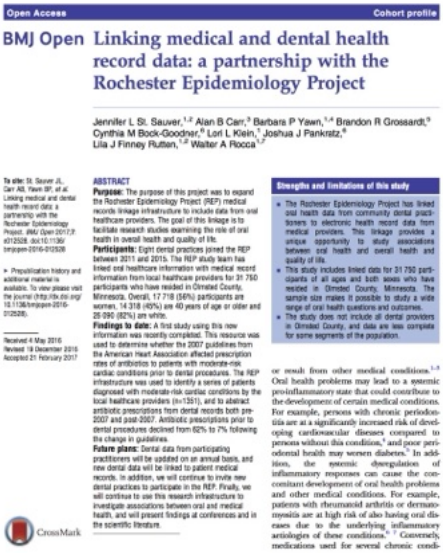
Utilization of the REP for OH Research



Open Access Cohort profile

BMJ Open **Linking medical and dental health record data: a partnership with the Rochester Epidemiology Project**

Jennifer L St. Sauver,[1,2] Alan B Carr,[3] Barbara P Yawn,[1,4] Brandon R Grossardt,[5] Cynthia M Bock-Goodner,[6] Lori L Klein,[1] Joshua J Pankratz,[6] Lila J Finney Rutten,[1,2] Walter A Rocca[1,7]

To cite: St. Sauver JL, Carr AB, Yawn BP, *et al*. Linking medical and dental health record data: a partnership with the Rochester Epidemiology Project. *BMJ Open* 2017;**7**:e012528. doi:10.1136/bmjopen-2016-012528

► Prepublication history and additional material is available. To view please visit the journal (http://dx.doi.org/10.1136/bmjopen-2016-012528).

Received 4 May 2016
Revised 19 December 2016
Accepted 21 February 2017

ABSTRACT

Purpose: The purpose of this project was to expand the Rochester Epidemiology Project (REP) medical records linkage infrastructure to include data from oral healthcare providers. The goal of this linkage is to facilitate research studies examining the role of oral health in overall health and quality of life.

Participants: Eight dental practices joined the REP between 2011 and 2015. The REP study team has linked oral healthcare information with medical record information from local healthcare providers for 31 750 participants who have resided in Olmsted County, Minnesota. Overall, 17 718 (56%) participants are women, 14 318 (45%) are 40 years of age or older and 25 090 (82%) are white.

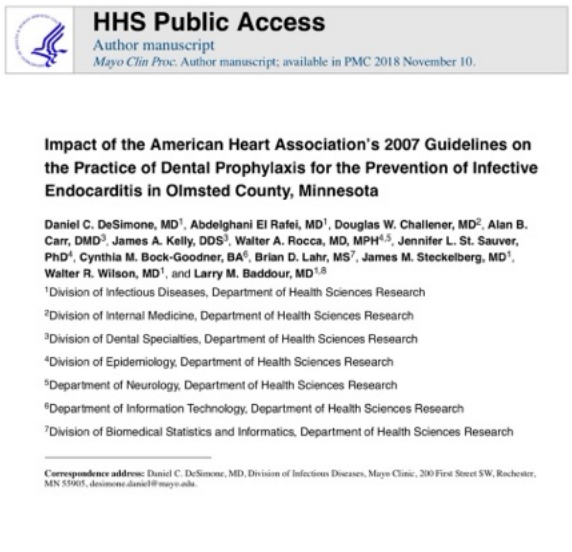
Findings to date: A first study using this new information was recently completed. This resource was used to determine whether the 2007 guidelines from the American Heart Association affected prescription rates of antibiotics to patients with moderate-risk cardiac conditions prior to dental procedures. The REP infrastructure was used to identify a series of patients diagnosed with moderate-risk cardiac conditions by the local healthcare providers (n=1391), and to abstract antibiotic prescriptions from dental records both pre-2007 and post-2007. Antibiotic prescriptions prior to dental procedures declined from 62% to 7% following the change in guidelines.

Future plans: Dental data from participating practitioners will be updated on an annual basis, and new dental data will be linked to patient medical records. In addition, we will continue to invite new dental practices to participate in the REP. Finally, we will continue to use this research infrastructure to investigate associations between oral and medical health, and will present findings at conferences and in the scientific literature.

Strengths and limitations of this study

- The Rochester Epidemiology Project has linked oral health data from community dental practitioners to electronic health record data from medical providers. This linkage provides a unique opportunity to study associations between oral health and overall health and quality of life.
- This study includes linked data for 31 750 participants of all ages and both sexes who have resided in Olmsted County, Minnesota. The sample size makes it possible to study a wide range of oral health questions and outcomes.
- The study does not include all dental providers in Olmsted County, and data are less complete for some segments of the population.

or result from other medical conditions.[1–3] Oral health problems may lead to a systemic pro-inflammatory state that could contribute to the development of certain medical conditions. For example, persons with chronic periodontitis are at a significantly increased risk of developing cardiovascular diseases compared to persons without this condition,[4] and poor periodontal health may worsen diabetes.[5] In addition, the systemic dysregulation of inflammatory responses can cause the concomitant development of oral health problems and other medical conditions. For example, patients with rheumatoid arthritis or dermatomyositis are at high risk of also having oral diseases due to the underlying inflammatory aetiologies of these conditions.[6 7] Conversely, medications used for several chronic condi-



HHS Public Access
Author manuscript
Mayo Clin Proc. Author manuscript; available in PMC 2018 November 10.

Impact of the American Heart Association's 2007 Guidelines on the Practice of Dental Prophylaxis for the Prevention of Infective Endocarditis in Olmsted County, Minnesota

Daniel C. DeSimone, MD[1], Abdelghani El Rafei, MD[1], Douglas W. Challener, MD[2], Alan B. Carr, DMD[3], James A. Kelly, DDS[3], Walter A. Rocca, MD, MPH[4,5], Jennifer L. St. Sauver, PhD[4], Cynthia M. Bock-Goodner, BA[6], Brian D. Lahr, MS[7], James M. Steckelberg, MD[1], Walter R. Wilson, MD[1], and Larry M. Baddour, MD[1,8]

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[3]Division of Dental Specialties, Department of Health Sciences Research

[4]Division of Epidemiology, Department of Health Sciences Research

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Correspondence address: Daniel C. DeSimone, MD, Division of Infectious Diseases, Mayo Clinic, 200 First Street SW, Rochester, MN 55905, desimone.daniel@mayo.edu.

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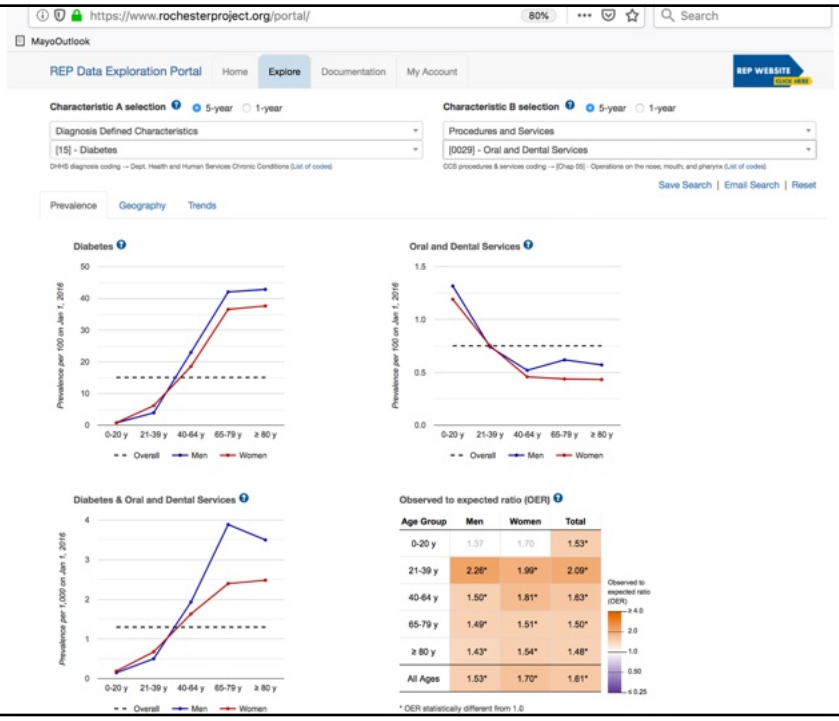
Data Exploration Portal



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MAYO CLINIC
HEALTH SYSTEM

TARGETING THE SUBGINGIVAL MICROBIOME TO LOWER INSULIN RESISTANCE AND GLUCOSE AMONG PEOPLE WITH PREDIABETES

ELIGIBILITY, INTERVENTION, ENROLLMENT

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ALTAIR

Disability Led Social Accountable Care Organization (ACO)

- Altair was founded in 2013 as a non-profit collaborative of leading disability services providers
- Today, it is a collaboration of 16 providers teaming up to provide value-based care
- It's members serve more than 45,000 Minnesotans
- Altair members serve 75% of Minnesotans receiving a Residential Service

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Mission and Values

Mission

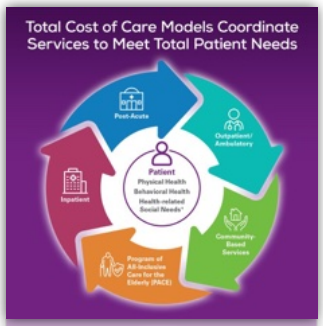
To bring the collective resources of our members to create quality innovative solutions and service delivery models promoting desired outcomes for people served by Altair's members

Values

1. Person-centered
2. Continuum of care/life-time focused
3. Collaboration
4. Innovation
5. Sustainability

Altair's Members

Total Costs of Care



- Altair partners with Minnesota's Medicaid and with CMS nationally to obtain all the Medicaid and Medicare claims data for 45,000+ people served by Altair's members.
- This makes it possible to measure the total costs of care
- Altair can measure the impacts of interventions on both cost and quality across the whole system.
- In partnerships with major health plans, this data is being used to develop alternative payment and value-based care models
- With Apple Tree…this now includes Dental services!

- ☑ Residential
- ☑ Medical
- ☑ Hospital
- ☑ Pharmacy
- ☑ Mental Health
- ☑ Transportation
- ☑ Dental Care
- ☑ Much More!

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Value-Based Care

- Altair is rolling out demonstration projects and large scale programs
- Altair's data-informed, value-based designs will provide cost-effective solutions that improve people's lives

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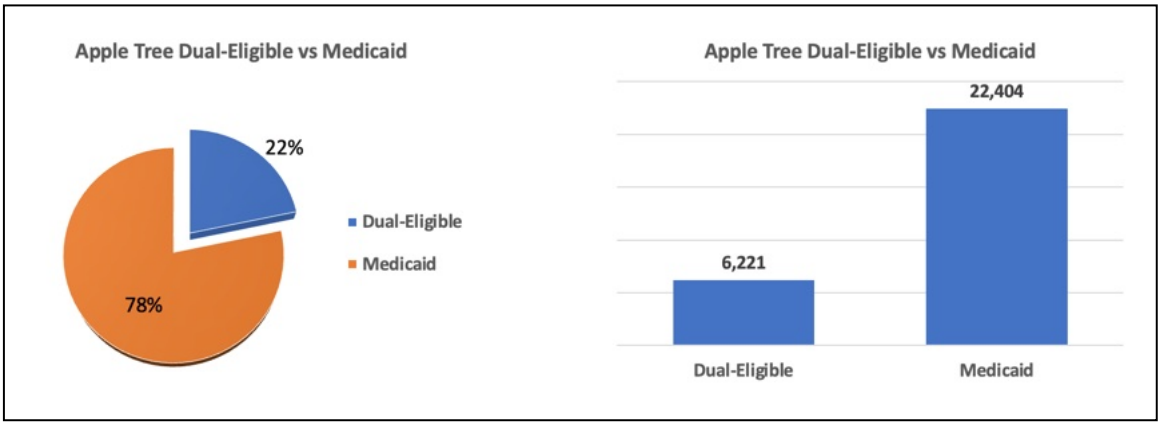
Medicare and Medicaid



- People with disabilities are one of the most costly populations to serve
- They are where medical, behavioral and dental services intersect most

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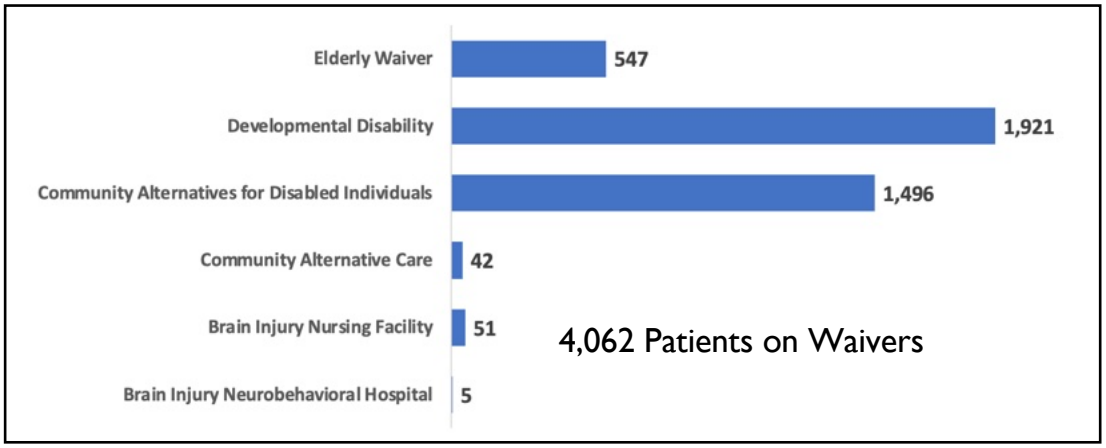
Patients on Disability and Elderly Waivers



Medicaid and Medicare Patients Served in 2024

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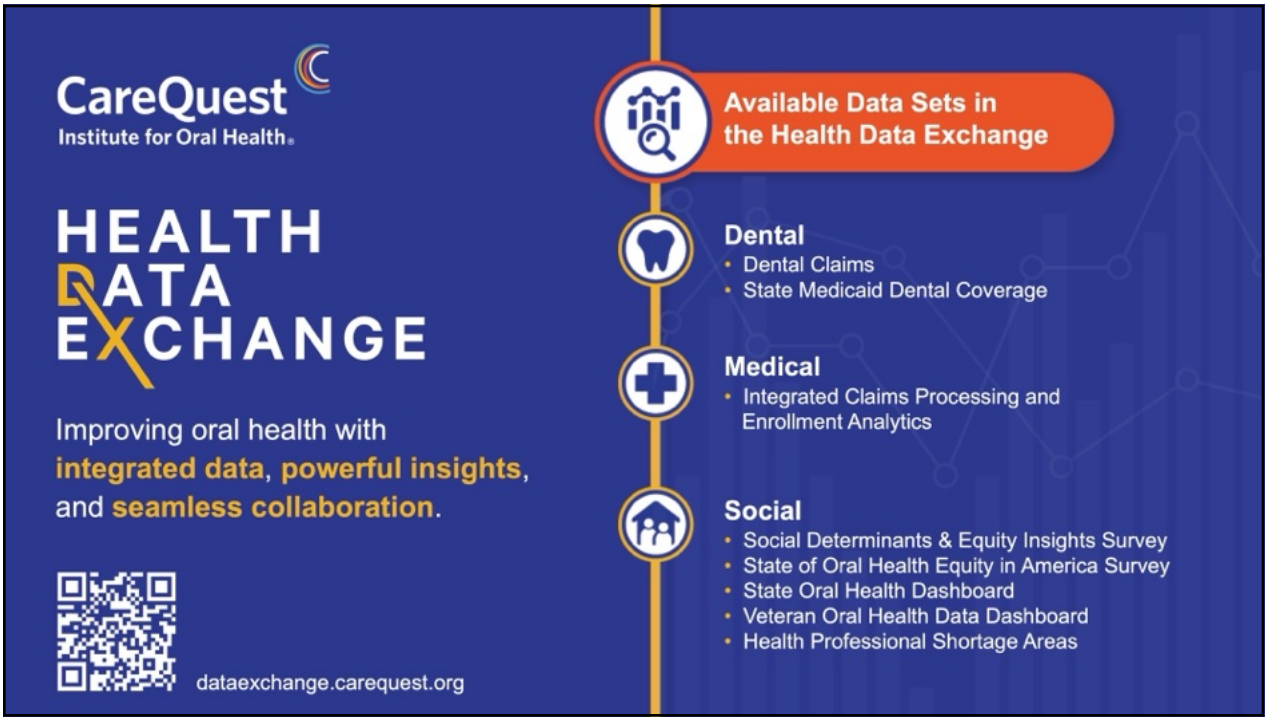

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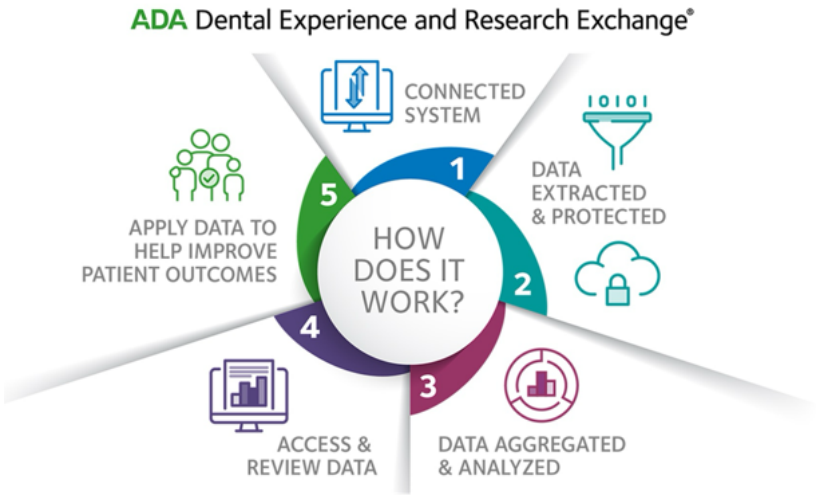
ADA Data Experience and Research Exchange



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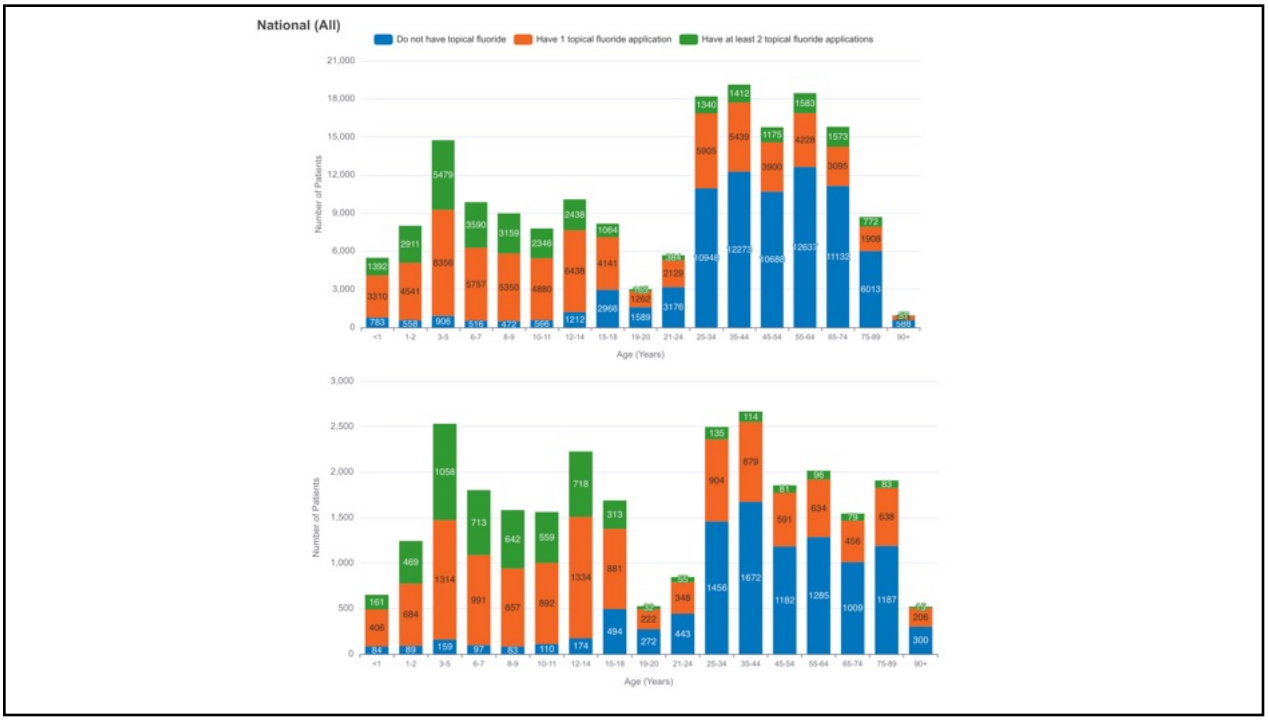
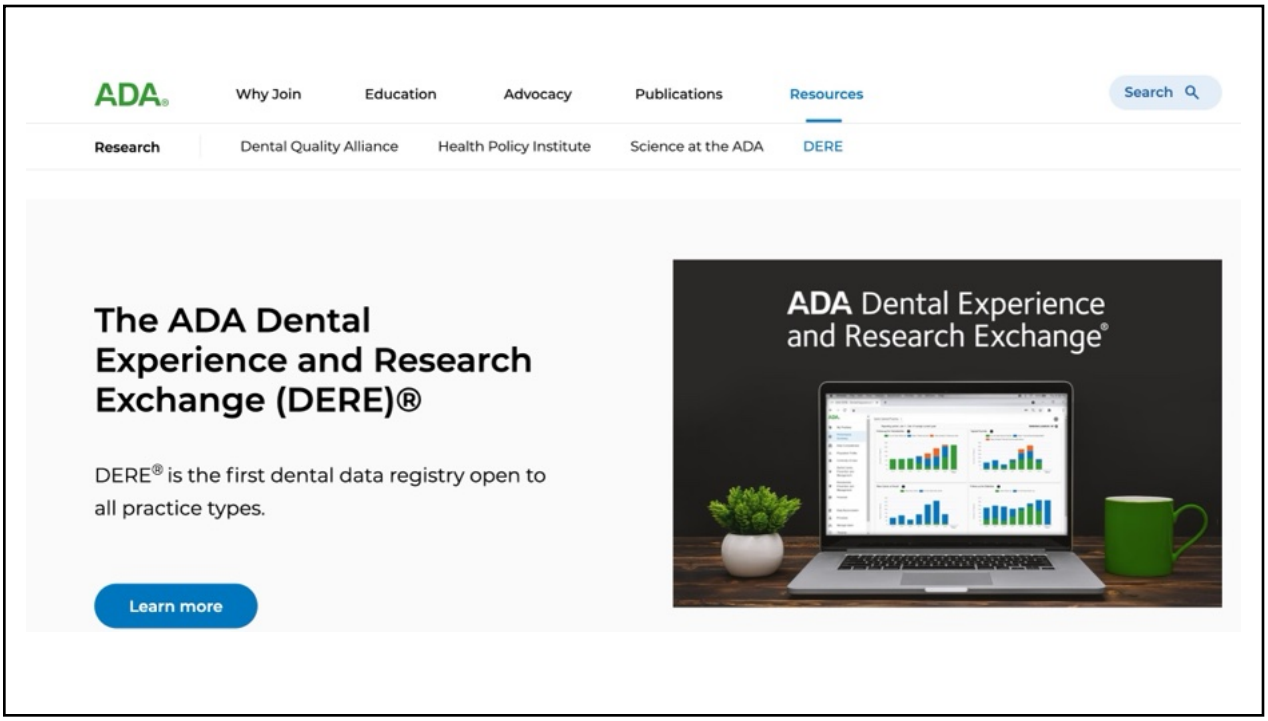
ada.rexdb.net/practice/portal/main/dental-caries
Action Required
ADA
Apple Tree Dental
lslashcheva@appletreedental.org
My Practices
Performance Summary
Data Completeness
Population Profile
Continuity of Care
Dental Caries: Prevention and Management
Periodontitis: Prevention and Management
Financial
Data Reconciliation
Providers
Manage Users
Timeline
Topical Fluoride Application
This report presents the percentage of active patients who receive fluoride varnish during the measurement year. This report excludes patients who are completely edentulous.
Generate
Reset
Print
Stratification
Age Distribut...
Location
Clinician
Compare With
National (All)
Hide Additional Filters
Apple Tree Dental
Do not have topical fluoride
Have 1 topical fluoride application
Have at least 2 topical fluoride applications
Number of Patients
Age (Years)

41


National (All)
Do not have topical fluoride
Have 1 topical fluoride application
Have at least 2 topical fluoride applications
Number of Patients
Age (Years)

42



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Thank You!

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