Children's Dental Services

Dental Therapy in Minnesota: A Study of Quality and Efficiency Outcomes

Sarah Wovcha, JD, MPH, Executive Director

- **CDS Mission Statement:**

  Since 1919 Children's Dental Services is dedicated to improving the oral health of children from families with low incomes by providing accessible treatment and education to our diverse community.

Children's Dental Services

Children's Dental Service History

- Children's Dental Services was established in 1919 and received non-profit status in 1954
- Previously a branch of the Minneapolis Department of Health
- Minnesota's primary provider of portable dental care to low-income children
- First provider in the nation of on-site dental care in Head Start setting
- Now offers services to entire state

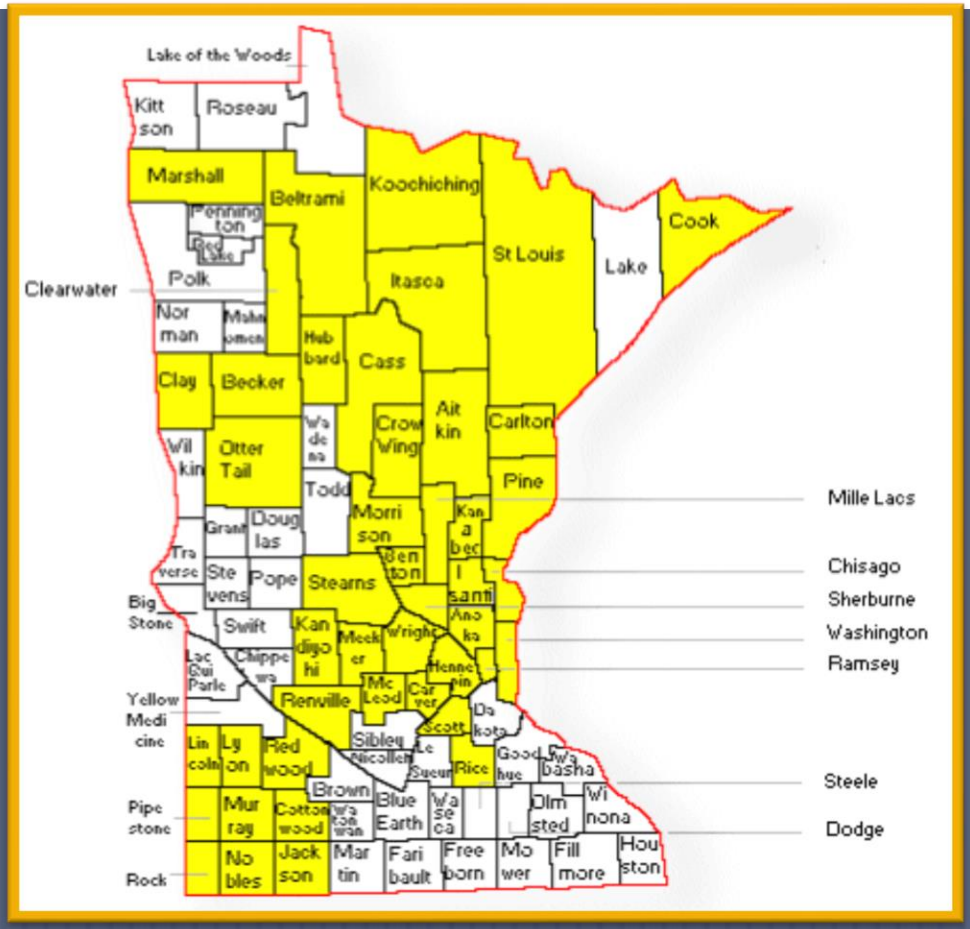
Service Area and Statistics

633 sites

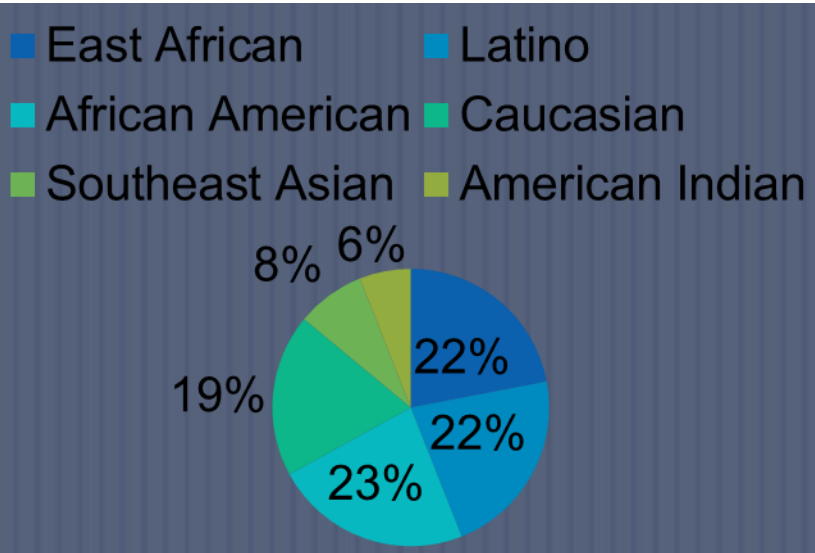
36,748 patients

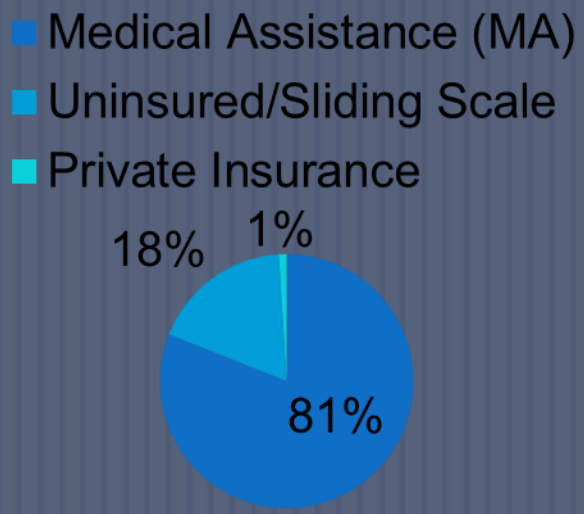
63,000 visits

94,000 procedures



2017 Patient Demographics





- Note: 80% of sliding scale patients receive free care

Problems and Climate Preceding Advent of Dental Therapy

- -swelling patient population
  - Immigrant and refugee resettlement
- -provider shortages
  - difficulty hiring and retaining dentists (DDS)
- -sought alternatives: foreign trained dentists, mid-level providers
  - examined Alaska model, New Zealand program, research on quality and efficacy

Why Advanced Dental Therapists (ADTs) are a solution

- Community-based
- More continuously present than scarce dentists
- Engage patients
- Naturally integrate preventive care and education into patient visit
- Gain expertise on limited scope of restorative procedures
- Free dentists to practice at “top of license” and focus on complex cases

Characteristics of ADTs

- All ADT services can be provided under General Supervision.
- General Supervision is defined in Minnesota Rule 3100.0100: "The supervision of tasks or procedures that do[es] not require the presence of the dentist in the office or on the premises at the time the tasks or procedures are being performed, but requires that the tasks be performed with the prior knowledge and consent of dentist".
- ADTs will therefore directly increase access to care by providing care in rural or low-income area where access is a huge problem.
- While ADTs are not required to undergo chart review by Dentists, CDS ADTs do consult and review cases in a collaborative manner.
  - Teledentisty and frequent communication enables these reviews for Dentists practicing in Minneapolis and St Paul and for ADTs practicing in Greater MN.
- CDS currently employs 3 Dental Therapists and 5 Advanced Dental Therapists

Procedures performed by ADTs

Oral Evaluation and Assessment	• OHI • X-Rays • Preliminary charting
Non Surgical Extractions of Primary and Permanent teeth	• Dressing changes • Administration of nitrous oxide • Suture removal
Restorations	• Placement of temporary restorations • Atraumatic restorative therapy • Administration of local anesthetic • Application of desensitizing medication or resin • Tissue conditioning and soft reline • Tooth re-implantation

Procedures performed by ADTs, cont'd.

Preventive	• Mechanical Polishing • Application of topical preventive or prophylactic agents, including fluoride varnishes and sealants
Endo	• Pulp vitality testing • Pulpotomies on primary teeth • Indirect and direct pulp capping on primary and permanent teeth
Mouthguards	• Fabrication of athletic mouth guards • Fabrication of soft occlusal guards

Practice Settings for Minnesota ADTs

Subd. 2.Limited practice settings:
An advanced dental therapist licensed under this chapter is limited to primarily practicing in settings that serve low-income, uninsured, and underserved patients or in a dental health professional shortage area.

https://www.revisor.mn.gov/statutes/?id=150a.105

Collaborative Management Agreements

- Collaborative Management Agreement (CMA): a formal agreement detailing roles and responsibilities for dental therapists and advanced dental therapist and supervising dentists
- Statute requires all advanced dental therapists to engage in a CMA
- No more than five DTs or ADTs can enter into a collaborative agreement with a single DDS
- CMAs must include:
  - Practice settings and populations to be served
  - Any limitations of services provided by the DT or ADT and level of supervision required
  - Age and procedure specific practice protocols
  - Dental record recording and maintaining procedures
  - Plan to manage medical emergencies
  - Quality assurance plan
  - Dispensing and administering medications protocol
  - Provision of care to patients with special medical conditions or complex medical histories protocol
  - Supervision criteria of dental assistants
  - Referral and reallocating clinical resources protocol
    - Collaborating DDS accepts responsibility for unauthorized care provided by DT/ADT
- ADT/DT must submit signed CMAs to the Board of Dentistry prior to providing care

Hiring: the first ADTs In Minnesota

Christy Jo Fogarty, a graduate of Metropolitan State University, was the first ADT hired and credentialed in Minnesota.

Employed at CDS since December 2011.

Became Minnesota's first licensed ADT in January 2013.

CDS hired Elizabeth Branca, its third ADT from the Metropolitan State University Program, in June 2013.

Formerly CDS' hygienist in St. Cloud, Jodi Becker graduated from Metropolitan State University Program in June 2014

Effective Dental Teams

According to the PEW Center on the States a team approach to dentistry has been found to be the most effective and provide the most access to dental care:

> "In solo private dental practices—where most dentists work—adding new types of providers and dental hygienists produced gains in productivity and increased earnings by a range of 17 to 54 percent. Dentists who operate a practice by themselves can increase their pre-tax profits by six or seven percent by accepting more Medicaid-enrolled children and hiring either a dental therapist or a hygienist-therapist".

Structure of New Dental Team

Traditional team: DDS, RDH and LDA.

Today: DDS, ADT, Collaborative Practice RDH, RDH, LDA, Unlicensed DA.

Integrating ADT:

- Scheduling own column of patients
- Similar to dental school: start, prep and final checks

Initial Questions about ADTs:

Dentists' biggest source of information about the field=local dental association

- Many questions arose about:

- -quality

- -ability to handle uncooperative patients

- -impact on patient care

Observations of ADTs

-strong clinical skills; **Quote of one CDS dentist about working with CDS ADT:**

"***She completes fillings better than I do***."

-significant relevant experience:

-receive more training on SSCs and motivational interviewing than most of our dentists;

-good behavior management

-mature, experienced professionals

-motivated

Issues of Quality and Risk

- ADTs and DDS undergo the same licensure exams for procedures they both provide.
- Marsh Insurance provides professional liability coverage for ADTs currently licensed as dental hygienists and members of ADHA. The cost is approximately $93/year.
- Professional malpractice insurance from various providers range in cost from $564 to $1,209 for CDS' dentists (average cost is $775/year)

CDS' data on Dental Therapy Care

- Since December of 2011, CDS' ADTs combined have provided care to over 18,000 patients. 47% have been served in portable, satellite sites; 32% in rural Minnesota.
- There have been 11 requests to see a dentist instead of a dental therapist.
- There have been no complaints of poor quality by ADTs at CDS; during the same period there were 4 complaints of poor quality against a dentist and 1 complaint against a hygienist.
- No complaints to MN BOD related to any MN ADT have been substantiated .
- Overall appointment wait time has decreased by 2 weeks; overall patient time with provider has increased by 10 minutes.
- 97% of survey respondents state that they are satisfied or very satisfied with the quality of care received by an ADT, compared with 92% satisfaction with dentists and 97% satisfaction with hygienists.
- An ADT bills and is paid the same for procedures as a dentist by both public and private insurance.

Results: Production 2011

NOTE: based on billing in community clinic setting with lower than average fees

Production Summary August 2011

Provider Code	Total Production Charges	Total Hours Worked	Total Production
DR11 Endo Provider	10,040	24	$418.33
DR01	55,165	136.8	$403.25
DR20	4,178	11.5	$363.30
DR12	47,261	148.85	$317.51
DR24	36,518	120.16	$303.91
DR36	45,898	161.53	$284.15
DR38	37,646	144.96	$259.70
DR42	26,105	116.7	$223.69
DR04	878	4.65	$188.85
DR41	7,301	40.09	$182.12
DR43	8,739	51.45	$169.85
DR44	3,616	24.2	$149.42
DR30	7,678	51.83	$148.14

Results: Production 2012

Production Summary August 2012 (*CDS began tracking ADT productivity in March. ADT productivity has consistently risen since that time.)*

Provider Code	Total Production Charges	Total Hours Worked	Total Production
DR11 Endo Provider	6,420	16	401.25
DR01	66,696	130.39	511.51
DR04	2,132	4.35	490.08
DR20	4,974	12	414.50
ADT01	66,508	171	388.94
DR12	43,978	150.66	291.90
DR36	43,562	162.35	268.32
DR43	22,946	85.95	266.97
DR44	43,219	174.65	247.46
DR38	27,094	111	244.09
DR42	20,757	85.94	241.53
DR24	23,861	110.2	216.52
ADT02	9,390	52	180.58
DR41	3,017	23.55	133.79

Results: Production 2013

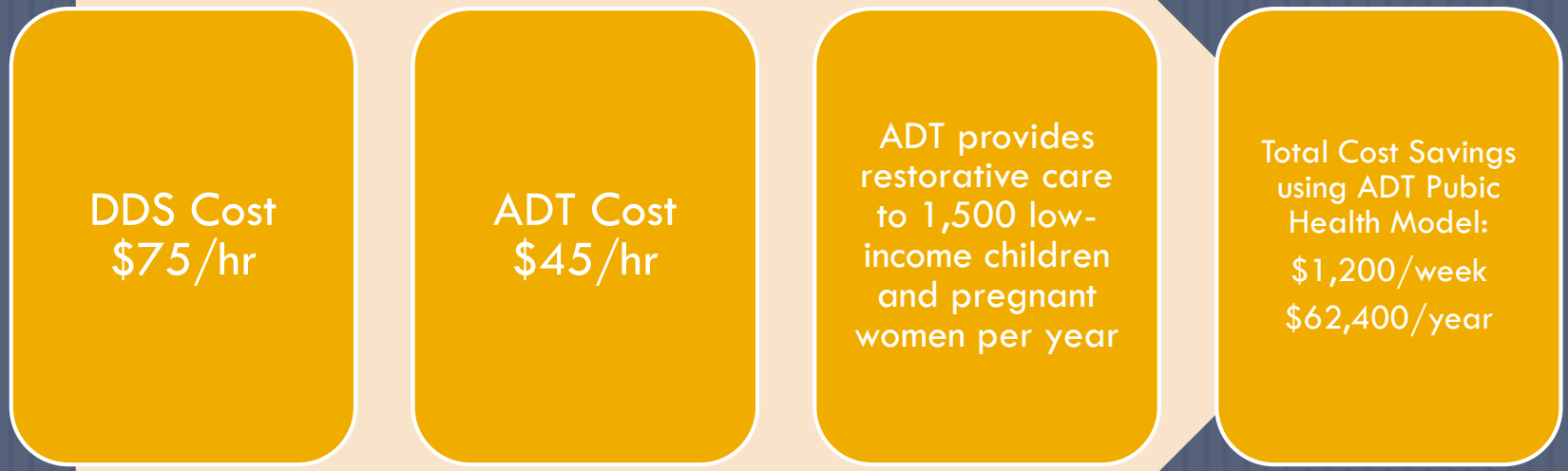
Production Summary August 2013

Provider Code	Total Production Charges	Total Hours Worked	Total Production
DR11 Endo Provider	8,516	16	$532.25
DR20	19,343	43.15	$448.27
DR44	53,555	138.05	$387.58
ADT01	46,755	123.5	$378.58
DR24	53,507	144.91	$361.45
DR36	42,304	140.05	$302.06
DR01	41,008	144.96	$299.66
DT01	4,277	16.3	$262.39
DR43	3,382	4.65	$207.48
DR12	57,856	171.87	$203.46
DR53	10,676	62.74	$170.16
DR04	487	3.05	$159.67

Summary of Dental team production results with integration of dental therapist (average salaries: dentist =$75/hr, dental therapist=$39/hr, advanced dental therapist=$45/hr)

- 2011: Average production of team is $280.72/hr
- 2012: Average production of team is $298.09/hr ($292.13 adjusting for fee increase); Average production of ADT is $340.35/hr
- 2013: Average production of team is $336.87 per hour ($326.76 adjusting for fee increase); Average production of ADT is $365.04/hr
- 2014-18: Average production of ADT remains $365/hr
- ADTs are vital to the financial viability of CDS; private practice dentists are seeing similar productivity and financial impact

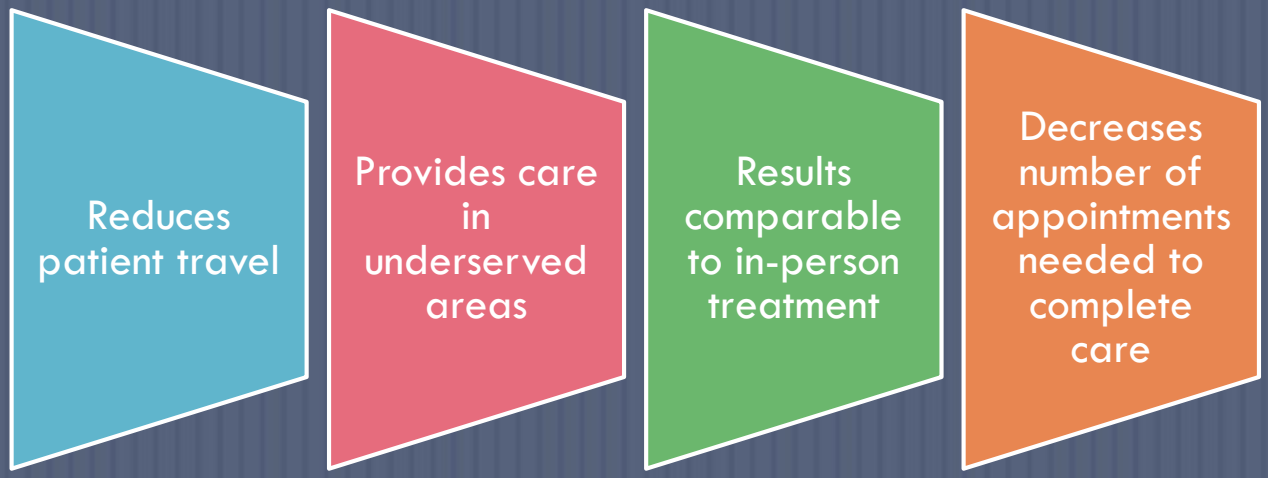
Results: Financial Impact



Cost-Benefit Analysis based on 1 ADT providing services covered under the ADT statute for 40 hours/week in a public health dental clinic.

Whats' New in Dental Therapy? Teledentistry Utilization

- Remote provision of dental care/advice using information technology rather than direct contact with patient
- Accomplished via telecommunication technology, digital imaging and the Internet
- Supported by Minnesota Department of Health (MDH) and Health Resources & Services Administration (HRSA) funding



Teledentistry Protocol

Hygiene services (including x-rays and patient assessments) provided at Rural Site A

Providers at CDS headquarters in Minneapolis review x-rays and treatment plan

On-site exam services no longer required at Rural Site A

Restorative services provided at Rural Site A

Average Time to Follow-up Care

Random Sample of 500 patients

250 received telehealth

250 received in-person exams

**Number of patients requiring follow-up care is similar for both telehealth and in-person exams*

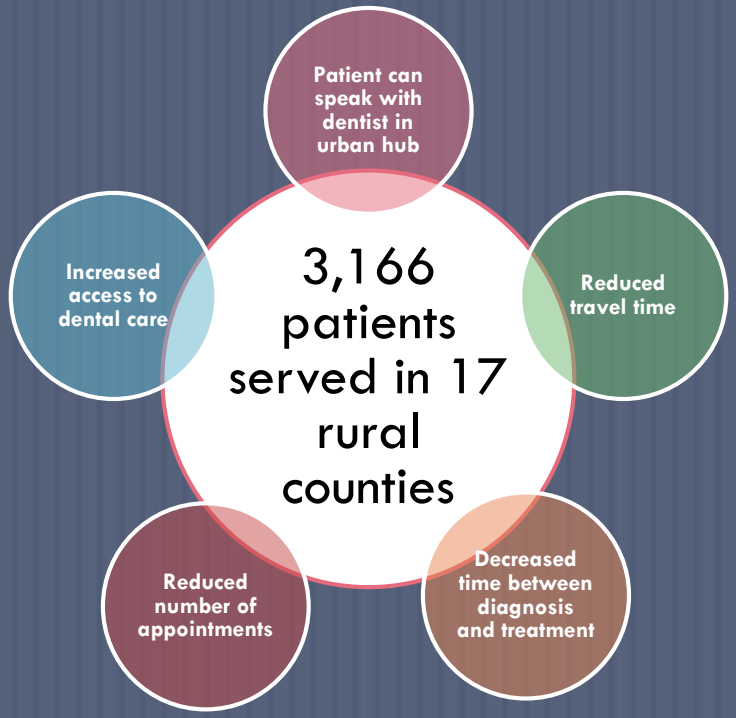
- Dentist following conventional exam: 3.2 weeks
- Dentist following telehealth exam: 2.4 weeks

- Dental Therapist following conventional exam: 1.8 weeks
- Dental therapist following telehealth exam .8 week

Impact on the Dental Team

- Requires increased communication which has developed into cohesive team experience
- The ADTs' questions and desire to learn has spurred additional learning among DDS
- Opportunity to reflect on clinical decisions through teaching/supervising
- Frees DDS to focus on specialized restorative care (DDS appreciate opportunity to hone higher skill level & relief from routine care)
- Overall increase in quantity of care at CDS
- Overall reduction in cost of care

Rural Teledentistry Project
Number of Patients Served



Observations:

- Graduated ADTs are in high demand for employment
  - Ability to do preventive care in portable settings is useful.
  - Ability to practice under general supervision allows flexibility and frees clinic space for additional providers.
  - Supervising dentists find that quality of care is excellent with ADTs.
  - Entire dental team is more efficient with integration of ADTs.
  - There have been no patient complaints related to any dental therapy work at CDS.
  - Flexible and transferable model of care delivery that is increasing access across Minnesota in a variety of urban and rural, public and private care settings.

RESOURCES

- **Dental Therapy Employer Guide:**

  http://www.mchoralhealth.org/mn/dental-therapy/references.html

- **Minnesota Board of Dentistry:**

  http://www.dentalboard.state.mn.us/Default.aspx?tabid=1165

- **University of Minnesota School of Dentistry:**

  http://dentistry.umn.edu/programs-admissions/ dental-therapy

- **Metropolitan State University :**

  http://www.metrostate.edu/msweb/explore/catalog/grad/index.cfm?lvl=G&section=1&page_name=master_science_advanced_dental_therapy

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THANK YOU

Questions?

Sarah Wovcha, JD, MPH
Executive Director
Children's Dental Services
612-636-1577
swovcha@childrensdentalservices.org