



COMPENDIUM OF RURAL ORAL HEALTH BEST PRACTICES



2020



Compendium of Rural Oral Health Best Practices

DEVELOPED AS PART OF THE NATIONAL RURAL ORAL HEALTH INITIATIVE

PREFACE

Research shows rural populations have lower dental care utilization, higher rates of dental caries, lower rates of insurance, higher rates of poverty, less water fluoridation, fewer dentists per population, and greater travel distances to access care compared to urban populations. Improving the oral health of rural populations requires innovative practices and flexible approaches to expand and better distribute the rural oral health workforce, including approaches tailored to remote areas. As oral health issues have long impacted those living in rural communities, the activities in this compendium have been designed to not only enhance access to quality oral health care, but to share knowledge of best practices with others serving rural communities. The National Rural Oral Health Initiative is the combined effort of the National Rural Health Association and the DentaQuest Partnership for Oral Health Advancement to improve oral health disparities in rural America through policy, communications, education, and research. This compendium is a product of that collaboration. The initiative is primarily intended to share and highlight best practices, models, research, and policies from around the United States that can be built upon in rural communities.

Keywords:

Oral health

Rural health care

Access to health care

Community health planning

FOREWORD

Since NRHA last produced a compendium on best practices in rural oral health, many strides have been taken to address this specific need for rural Americans, but several challenges remain. As determined by the U.S. Health Resources and Services Administration, some 34 million individuals live in rural or partially rural areas with dental health professional shortages. There are significant bodies of research that link oral health to a person's overall health and well-being. Additionally, there is still a need to prioritize the integration of oral health into general practice in policy and health literacy initiatives. The submissions in this compendium represent some of the most innovative models and programs to tackle these issues in rural communities.

I am proud of the work NRHA has continued to do alongside communities to advance improvements to rural oral health care access. We will continue to remain steadfast in our mission to work in this area.

Alan Morgan
National Rural Health Association CEO

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WORKFORCE DEVELOPMENT AND TRAINING

Mouth Care Matters

Purpose: Mouth Care Matters offers specialty training in the area of oral care. The initiative was originally designed for personal assistants, patient care technicians, direct support professionals, and home care, hospice, and nurse aides, but the program is suitable for long-term service staff including licensed nurses. Family caregivers also benefit from training. Taught by dental hygienists/ certified instructors, the program offers practical, hands-on skills to provide the best oral care for all ages and abilities. A huge takeaway by participants is “a greater understanding about the link between a healthy mouth and overall health and well-being.”

Summary: Mouth Care Matters (MCM) Phase I is one of three major grant initiatives of the Lifelong Smiles Coalition funded by Delta Dental of Iowa Foundation. The other initiatives are the Iowa Department of Public Health I-Smile Silver program and the Office of Education and Training within the University of Iowa College of Dentistry and Dental Clinics. The initiatives have a common goal of increasing access to oral health for older Iowans who are homebound or residents in nursing homes. MCM is focused on increasing public awareness; building relationships and partnerships; developing the MCM curriculum for direct care workers (DCW), nurses, and supervisory staff; training a cadre of MCM instructors; testing MCM training with nurses and DCWs; and delivering oral hygiene awareness and practice training sessions.

CURRICULUM AND INSTRUCTORS

The competency-based curriculum was developed by increasing the likelihood professionals will continue working in the field of direct care. Ninety percent said it increased the likelihood they will remain with their current employer; 99 percent said they could personally use the information learned.

CHALLENGES AND SOLUTIONS

Nurse managers said if they had more training, they could better support the time and efforts needed to do oral hygiene. To resolve this issue, MCM offered training to nursing staff and answered their questions. The nurses who completed the training recommended that to increase overall effectiveness, the training could be offered to nurses and other appropriate staff (dietary professionals, therapists). Nurse supervisors shared that trained health care workers were identifying and reporting oral issues to supervisors. “I am so thankful I took the Mouth

Care Matters class,” says Sadie Fuson, CNA. “It helped me learn why Janice did not want to eat due to sores on her tongue. Even with 19 years of knowledge, it’s great to refresh your skills, keep an open mind, and learn new things to show others how to provide better oral care for our residents.” Fuson also observed and reported an abscessed tooth and thrush.

Curriculum and Instructors:

- The competency-based curriculum was developed by University of Iowa Colleges of Nursing and Dentistry faculty.
- A committee of content experts have reviewed curriculum.
- Thirty-seven dental hygienists have been trained as MCM instructors and completed an application to become instructors.
- One-hundred percent of instructors were satisfied with the training. Instructor trainings were held in the Des Moines Area Community College service area including the following counties: Adair, Audubon, Boone, Carroll, Clarke, Crawford, Dallas, Greene, Guthrie, Hamilton, Hardin, Jasper, Lucas, Madison, Mahaska, Marion, Marshall, Polk, Poweshiek, Shelby, Story, and Warren (16 counties are designated as rural per HRSA/FORHP).

MCM I TRAINING

MCM’s one-day training session for DCW had 197 graduates.

- Twenty-one nurses and others have graduated from Mouth Care Matters.
- Twenty-one MCM classes were held regionally at local community colleges and other organizational sites.
- Ninety-nine percent rated the training excellent or very good.
- Ninety-nine percent would recommend the program to co-worker.
- Ninety-six percent said it increased the likelihood they will continue working in the field of direct care.
- Ninety percent said it increased the likelihood they will remain with their current employer.

- Ninety-nine percent said they could personally use the information learned.

SUSTAINABILITY

Mouth Care Matters Phase I success, evaluation, and outcomes have encouraged support for the next phase. Funding from the Retirement Research Foundation for an 18-month, \$126,573 grant and additional funding from Delta Dental of Iowa Foundation made possible Mouth Care Matters Phase II. Building on Phase I, the overarching goal is enhancing access to optimal oral care for older Iowans who receive services in their homes, assisted living communities, and other locations.

The purpose is increasing access to optimal oral care for older Iowans through systemic changes that integrate and sustain good oral care practices. The objective is to implement and sustain the policies and practices provided in the MCM Employer Implementation Toolkit in three home and community-based service provider networks by December 2020. The sites include rural and urban assisted living facilities, non-medical in-home providers, and the home care division of Western Home Communities.

One unique MCM II activity is working directly with nursing staff to develop internal oral care policies and practices related to intake assessments, health status reporting, and care plans. Provider partners are working to best integrate oral health protocols into their organizational structure. For example, Home Instead is exploring the addition of seven key questions/observations into electronic reporting devices. MCM II evaluation components include participant evaluation (pre-post training) and focus group studies for supervisors and nurses. MCM II is nine months from completion.

EVALUATION

Excerpts from the Mouth Care Matters Phase I: Prepare to Care Oral Health Specialty Training evaluation by the National Resource Center for Family Centered Practice and the University of Iowa School of Social Work examine the oral health specialty curriculum. Specifically, did the curriculum achieve the intended result of providing DCWs with practical content, was the knowledge retained, and did that knowledge transfer to

practice in the work environment?

Pre- and post-tests were completed to measure knowledge gain. Paired sample t-tests were performed to gauge whether the number of items correctly answered on the test increased significantly after training. The mean score for the number of items answered correctly increased 2.87 from before to after training. This is a significant increase ($t = 8.558$; $df = 63$; $p = .000$). Following the training, a high level of knowledge among participants is found in 14 content areas.

- Substantial increases in knowledge were provided by participants about how the curriculum and testing could be improved.
- Three items were specifically identified where both the curriculum and the test would benefit from modification:
 - Increased levels of attention to oral health care at nursing homes where staff were trained.
 - Evidence of regular oral care delivery based on observations at nursing homes.
 - The training highlighted the importance of oral care on overall health; indications are present that oral care improved as a result of trainings.

Efficacy and impact: There is growing evidence of the importance of oral health in caring for older adults in nursing homes and in-home care settings. Poor oral health has been associated with systemic diseases including pneumonia and respiratory infections. The evaluation found significant gains in knowledge about oral health among DCWs trained through the MCM project.

The evaluation also underscores the need to continue monitoring the effects of training for direct care workers and how the results of training translate into practice in the workplace, especially nursing homes and home health.

Delta Dental of Iowa Foundation and Lifelong Smiles Coalition received the Iowa CareGivers' 2017 From the Heart Recognition Award for their commitment to improved access to oral health care for older Iowans through Mouth Care Matters.

Physician Assistant Program Training

Purpose: The main purpose of this project is to foster inter-professional development to provide Head Start (HS)/Early Head Start (EHS) children living in Utah and on tribal lands access to dental care and preventive services. We wish to help overcome health disparities within these vulnerable populations by training inter-professional, non-dental medical providers in the University of Utah Physician Assistant (PA) Program to provide oral health risk assessments (OHRA) and fluoride varnish to HS/EHS children.

Summary: Utah Department of Health (UDOH) Oral Health Program (OHP) dental hygienist Michelle Martin, RDH, MPH, along with co-worker hygienist Lauren Neufeld, BSDH, train University of Utah PA students in a lecture class. This lecture provides information on children's oral health issues, risk factors for decay, primary teeth, oral health risk assessments, and how to apply fluoride varnish. Trainers then go with PA program



students and faculty to three different Migrant Head Starts (Genola, Honeyville, and Providence, Utah), as well as Ute Tribe Head Start in Roosevelt, Utah, to provide medical well-child visits along with OHRA and fluoride varnish. The PA program has been doing well-child visits at Migrant Head Start for more than 20 years has a wonderful relationship with them. The last eight years we have implemented the OHRA and fluoride varnish training from the UDOH OHP. During the clinic, if a child is found to have an abscess, Martin will call local resources until she finds a dentist who can see the child within 24 hours. Over the last four years we have shared this best practice with PA students, as well as everyone (PA students, UDOH OHP staff, and HS staff) attending a clinic at the HS/EHS. We have also implemented it with Ute Tribe Head Start. We encountered a barrier when the health manager at Ute Tribe HS was gone without much warning. We started working with the director at Ute Tribe HS and are waiting to meet a new health manager who can oversee the project. We continued to see the children and ironed out this hiccup.

When a PA student detects a possible abscess, they

call one of the hygienists on staff and we verify if there is a true abscess. When a child was found with gross decay, we made some calls. Here is the follow up on the child via an email to Martin from the Ute Tribe HS health and safety coordinator: "I just wanted to share that the child who had gross decay on his screening in January has since had corrective surgery. He is so proud of his new smile and shows it off every chance he gets. His diet and speech have both improved. He is much more sociable and successful in class in all areas, not just speech. All thanks to your efforts."

Over the last eight years, we have helped multiple children who needed urgent attention connect to dental care from the OHRAs. The ultimate goal is to help these children and their families have a dental home and facilitate preventive and restorative care. The National Center for Early Childhood Health and Wellness appoints a state dental hygiene liaison for Head Start who offers strategies to improve access to oral health care for pregnant women and children. Martin serves in this role in Utah and reports directly to the National Center for Early Childhood Health and Wellness. Using program information report (PIR) data, Martin works with the state Head Start collaborator to target which Head Starts need help obtaining dental homes. We also work with AUCH Community Health Centers in Brigham City, Payson, Provo, and Logan, Utah, which have dental clinics and have seen several of our children with abscesses or gross decay.

Efficacy and impact: According to the PIR from the Office of Head Start Region 8, in 2016, 77 percent of children from the Ute Tribe had a dental home. Following implementation of the program, as of 2019, this rose to 85 percent. Collaborations between UDOH OHP and the University of Utah PA Program continue to focus on providing care for vulnerable populations. The Migrant Head Start/Early Head Start programs also have seen a rise in children and families with dental homes. In 2015 the MHS Centro de la Familia de Utah was at 96 percent, which is very high – again, the PA program has been conducting one-day clinics at this location for more than 20 years. Since implementing training, this has risen to 98.6 percent. These efforts require a lot of collaboration and coordination on all fronts.

INTEGRATION OF CARE

Project Zero – Women & Infants

Purpose: The purpose of this project was to implement sustainable oral health integration on a rural Indian reservation through increased utilization of dental services, policy changes that supported access to oral health, and outreach to patients and providers. This reservation has one Indian Health Service health clinic and is located 80 minutes from other health care. In 2010, 36.2 percent of the tribe was below the federal poverty level (FLP), and 63.1 percent was 200 percent below the FLP1.

Summary: Project Zero—Women & Infants (PZWI), housed at Northern Arizona University Department of Dental Hygiene, is one of 16 perinatal and infant oral health quality improvement projects in the United States. The goal of PZWI is to reduce the prevalence of oral disease in pregnant women and infants ages birth to three years through increased access to high-quality oral health care, including integration of oral health in primary care services, preventive services, restorative treatment, and provider and patient education. PZWI's goals are structured in response to three aims: utilization of dental services, policies that support access to oral health, and outreach to patients and providers. See figure 1.

PZWI partnered with an Indian Health Service (IHS) clinic and a local tribe to achieve these goals. To be responsive to tribal leadership and community members' needs, the project was grounded in a community-based participatory research (CBPR) framework. The use of CBPR facilitated the expansion and success of the project. The original goal of the two-year project was to develop an effective patient referral feedback loop between the IHS dental clinic, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and tribal community health representatives (CHR) to ensure pregnant women and their children were receiving dental care.

Activities increased from the referral process to include education and outreach. Discussions led the team to realize the extent of oral health disparities, high incidence of oral disease, and number of barriers to care that existed on the reservation.

The project expanded to include 1) IHS dental clinic, 2) tribal WIC, 3) CHR, 4) IHS nutrition department, 5) tribal department of health, 6) IHS health center registration, 7) tribal Head Start, and 9) tribal judicial system. The final goal was to develop sustainable oral health integration through systemic change across the reservation for all tribal members that establishes oral health as a priority. The progressive involvement of other areas

helped secure widespread dissemination directed by strong internal leadership to ensure sustainability.

At the end of PZWI's involvement in the project, the team had engaged in numerous oral health integration activities that can serve as a model for others. The PZWI team created culturally relevant educational materials for support staff, conducted oral hygiene education and fluoride varnish application training, provided continuous quality improvement training for the referral project, and created and placed culturally relevant posters to demystify oral health for pregnant women and infants. See figures 2 and 3.

The team drafted and implemented a court-order statement for judges requiring foster parents to ensure foster children receive oral health care; applied fluoride varnish for pregnant women and infants; and participated in community activities to promote oral health awareness, including local radio shows, health fairs, and events with local schools and tribal Head Start programs. See table 1.

Keys to the success of this project were collaboration through well-established relationships; leadership's involvement, commitment, and support; and team members' dedication to improving oral health for community members. The program manager was a highly respected tribal member and the principal investigator founded a long-term grant-funded project at the dental clinic, which was central to gaining support and trust.

Honest, open communication was also important. Leadership from the IHS dental clinic, tribal WIC program, tribal CHR program, and PZWI team established communication through regularly scheduled meetings in person and via videoconference, as well as unscheduled phone calls. Project leaders from the dental clinic and tribal programs took the initiative to their respective leaders to garner support.

The team's dedication was reflected in their flexibility with meeting times. Often meetings were held outside of regular business hours or during lunchtime so front-line providers could participate. The primary barrier encountered during the project was the geographic distance between the home base of the PZWI team and the other partners, requiring alternative methods of communication. Also, the IHS and tribal programs involved in this collaboration are under two

different administrations, which necessitated regular intentional communication. See figure 4.

The partnership helped explore ways in which community oral health needs can be addressed utilizing existing services and broadening the scope of information presented. The collaboration allowed partners to share their expertise for the benefit of vulnerable populations and learn from each other the best ways to measure and track improvements in oral health. The PZWI team is grateful for the opportunities this collaboration allowed.

Efficacy and impact: The partnership devoted most of its time to the successful creation of the referral process, which integrated oral health within tribal services like WIC and CHR programs and the dental clinic. The referral process from WIC to the dental clinic resulted in a 68 percent completed referral rate within the first six months (38 referrals from WIC to the dental clinic, with 24 of those patients seen by the clinic).

Additionally, the partnership has reached more than 350 individuals through community outreach

related to health education and oral health. These events supported the work of project partners with the intent of increasing local awareness about oral health and the resources available. Other outcomes include 12 people being trained in continuous quality improvement with nine attending a follow-up session; six frontline workers being trained in fluoride varnish application and seven in oral health education and concepts; and an additional 50 children receiving fluoride varnish at community events.

Perhaps the most significant outcomes can be seen in the policy changes that demonstrate a systemic shift in a culture that is beginning to value oral health. All foster parents who have fostered a child since August 2019 have been instructed to take the child to the dentist. Thirty days after, a social worker follows up with the foster parent to determine if the child has seen a dentist. Due to confidentiality, the tribal judicial system was not able to release the number of children who had been placed in the foster system and have seen a dentist during this time.

Utilization and policy aims		Outreach aim	
<p>PZWI goal 1:</p> <ul style="list-style-type: none"> • Provide support and assistance to community health centers as they plan, implement, and assess integration of oral into their maternal/childcare <p>PZWI goal 2:</p> <ul style="list-style-type: none"> • Support oral health screening integration 	<p>PZWI goals 2 and 2a:</p> <ul style="list-style-type: none"> • Deliver education on best practices in oral health care delivery and referral for maternal/child health care providers • Deliver education and support in quality improvement methods to participating sites 	<p>PZWI goal 3 (completed):</p> <ul style="list-style-type: none"> • Complete planning phase for an efficient statewide data collection network that integrates current EMR 	<p>PZWI goal 3a:</p> <ul style="list-style-type: none"> • Partnership in statewide activities connected to oral health resources and awareness

Figure 1

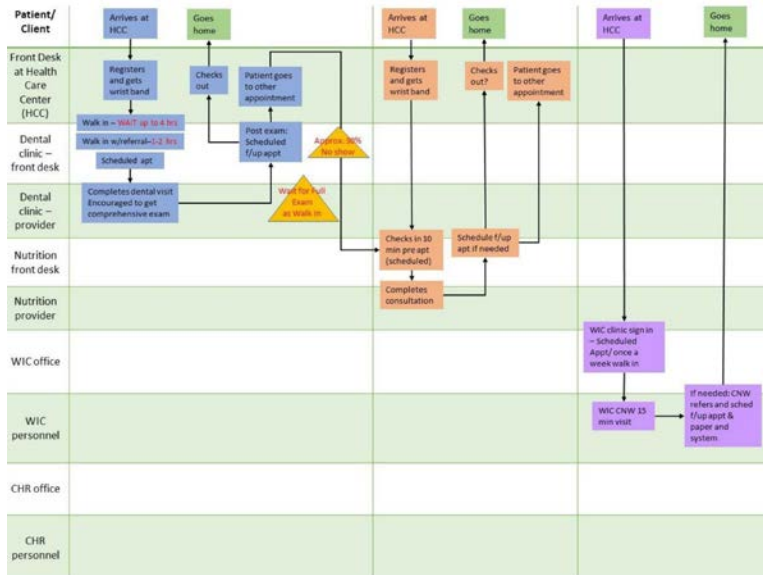


Figure 2. Swim Lane to Clarify Gaps in Existing Referral Process.



Figure 3. Culturally relevant educational materials

Summary of Project Activities

Major Activities	Agencies Involved	Month of Project
Created culturally relevant educational materials for support staff	PZWI	Month 2, year 1
Conducted oral hygiene education and fluoride varnish application training	CHR, WIC, PZWI, dental clinic	Month 2, year 1
Provided quality improvement training for the referral project	Dental clinic, CHR, WIC, and nutritionist in November	Month 2, year 1
Established a warm hand-off referral process	WIC, CHR, dental clinic, PZWI, patient registration	Month 6, year 2
Drafted and implemented a court-ordered statement for judges requiring foster parents to take foster children in their care for oral health services	Dental clinic, judicial system, PZWI	Month 6, year 2
Applied fluoride varnish on pregnant women and infants	CHR, IHS dental clinic	Months 1,2, 3
Created and placed culturally relevant posters to demystify oral health for pregnant women and infants	Nutrition, PZWI	Throughout the project
Participated in community activities to promote oral health awareness (local radio shows, health fairs, and events with local schools and tribal Head Start program)	PZWI, dental clinic	Throughout the project

Table 1

Medical Oral Expanded Care (MORE Care)

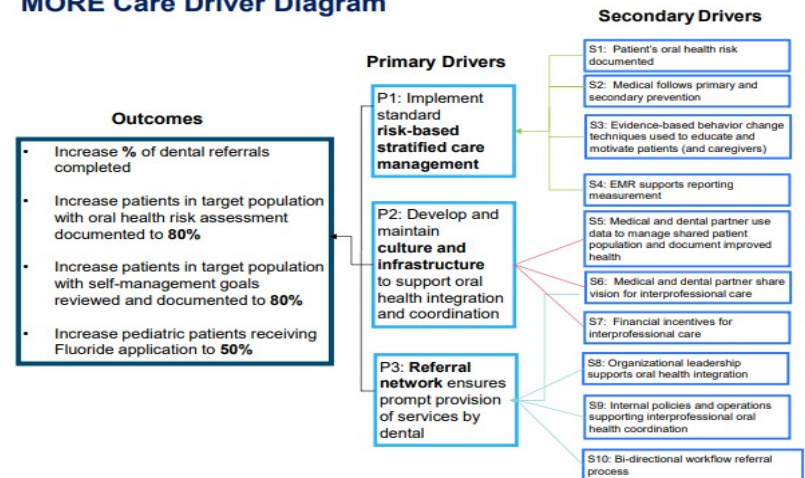
Purpose: MORE Care addresses health disparities through the integration of oral health into primary care practice and the development of dependable oral health care networks. Using an improvement-based framework, participating care teams work with key stakeholders in their communities to create a model of inter-professional oral health care. Care teams aim to achieve the following outcomes: increase patients in selected populations with oral health risk assessments to 80 percent; increase patients in selected populations with self-management goals reviewed and documented to 80 percent; increase pediatric patients receiving fluoride application to 50 percent; and increase the percentage of dental referrals completed (varies between sites).

Summary: In 2018, DentaQuest partnered with the Central Oregon Health Council (COHC), which provided an incubator for the work, to bring MORE Care to Oregon’s coordinated care environment. Providing visionary leadership in the region, COHC facilitates initiatives for all health sectors in the community to bring the Regional Health Assessment and the Regional Health Improvement Plan (RHIP) to life. From 2015 to 2018, RHIP had 10 pillars including oral health. The oral health sector was committed to prioritizing inter-professional partnerships. The collaborative began in January 2019 and will continue through December 2020. MORE Care utilizes a quality improvement approach and partners with primary care practices using the Institute for Healthcare Improvement’s Breakthrough Series collaborative model. Project staff support participating primary care practices through a combination of coaching and facilitation of shared learning through webinars and in-person sessions. Some activities include monthly team coaching calls or visits, review of quality improvement data, monthly action period calls or webinars, and in-person learning sessions.

Guided by MORE Care Project staff, the teams in Central Oregon developed a project aim and action plan for getting started. Teams adopt a “plan, do, study, act” methodology to test changes to workflows before implementing throughout the clinic.

The first several months of the collaborative focused on strategies to integrate oral health into primary care. Once care teams became familiar with and tested integration strategies, the focus shifted toward improving care coordination and building referral relationships with dental providers.

MORE Care Driver Diagram



Representatives from regional dental care organizations participated in conversations to improve communication between medical and dental providers.

Project staff will continue to work with teams on sustainability and focus on areas of improvement. Significant barriers have arisen throughout the collaborative, presenting opportunities for learning useful medical-dental integration initiatives. Broadly, health information technology has brought about several challenges. Two teams have been unable to monitor and report quality improvement data related to oral health integration and coordination. Their electronic medical record would not accept a CDT code, which caused issues in reporting. Without evaluating progress, they cannot know if they are making an improvement. However, through coaching conversations and qualitative information, these two teams have made great progress in integration and coordination – even if not reflected in run charts. Additionally, the electronic exchange of health care data between medical and dental providers has been challenging. Distinct health information systems are unable to interpret and share patient data.

As a result, primary care and dental care teams must adapt standard workflows by utilizing fax or email to exchange patient information and “close the referral loop” or improve bidirectional inter-professional communication. A second major barrier to integration of oral health into primary care visits is the inconsistency of reimbursement across payers.

While application of fluoride varnish (CPT 99188, CDT D1206) tends to be more widely reimbursed across public and commercial payers, the oral health assessment code (D0191) is less so. To avoid passing along charges from denied claims to patients, primary care teams have reported that creating different workflows for different payers does not align with their organization's mission, and in some cases they have stopped sending claims altogether. This brings additional concerns for teams as they move to spread these efforts within their health systems. This inconsistency across payers is of local, state, and national significance and requires further evaluation and action. While these barriers are significant, teams have had great success as well.

Teams in Central Oregon tested and implemented oral health integration strategies (oral health risk assessment, application of fluoride varnish, and discussion of oral health self-management goals) quickly. From a quality improvement perspective, change within their respective systems in these three activities began to occur four to five months into the collaborative, which speaks to the teams' strengths in rapid-cycle improvement.

These teams understood the importance of data and used it to understand how care was changing. Successful teams also discussed MORE Care efforts in weekly huddles and provider meetings, making it a priority across the organization. Although challenges in care coordination and communication between medical and dental providers exist, a success in Central Oregon has been the development of relationships and participation of dental organizations. Both sides understand the importance of their inter-professional relationship and are willing to continue testing strategies and workflows to improve care for shared patients.

Efficacy and impact: MORE Care's impact in Central Oregon is demonstrated through a combination of quantitative and qualitative information. MORE Care teams track (manually or electronically) and report on four oral health quality improvement metrics related to integration strategies with select populations, such as pediatrics or pregnant women. Teams

increased the proportion of patients in selected populations with oral health risk assessments documented to above 80 percent. Teams increased the proportion of patients in selected populations with self-management goals reviewed and documented to above 80 percent. Teams increased the proportion of pediatric patients receiving fluoride varnish application to approximately 40 percent. One team increased closed loop of dental referrals to above 60 percent.

As a result of the teams' efforts:

- 824 patients received an oral health risk assessment at a primary care visit.
- 773 patients discussed oral health self-management goals with their provider at a primary care visit.
- 397 pediatric patients received fluoride varnish at a well-child visit.
- 131 patients were identified as needing oral health care, and referrals were sent from medical to dental.
- Five dental clinics or dental care organizations in Central Oregon are participating in efforts to coordinate care for shared patients.

MORE Care provided a handshake to begin the long process of creating a relationship with shared learnings both for primary care and dental providers. Some early results indicate a willingness to consider value-based payment arrangements between inter-professional providers. MORE Care teams will continue these activities in year two of the project, with emphasis on sustaining changes and spreading to new populations, sites, or providers.

Teams who were part of the pilot became champions and leaders for oral health integration within their respective systems and resources in the community.

Pennsylvania Rural Primary Care Oral Health

Purpose: The Pennsylvania Rural Primary Care Oral Health Initiative improves the oral health of residents in rural communities. The program focuses on the integration of oral health into rural primary care in the rural health clinic setting through inter-professional development and coordination of care. This coordination can be achieved by developing partnerships with existing oral health care providers in local communities or expanding services within the rural health clinic to include preventive and/or restorative dental treatment.

Summary: In 2016, the Pennsylvania Office of Rural Health (PORH) formally launched the Pennsylvania Rural Primary Care Oral Health Initiative. In partnership with the DentaQuest Institute (now the DentaQuest Partnership for Oral Health Advancement), PORH initiated participation in the Medical Oral Expanded Care (MORE Care) collaborative. This collaborative emphasized the integration and coordination of oral health care in rural health clinics (RHCs). Using framework from the Institute for Healthcare Improvement's Breakthrough Series College, providers and staff from nine RHCs across two rural health systems received education on oral health during a series of three learning sessions. Following these sessions, clinic teams began integrating oral health into their clinics using "plan, do, study, act" cycles.

One-on-one technical assistance and regularly scheduled phone meetings allowed clinic teams to ask questions and share their experiences with others participating in the collaborative. Integration of oral health includes the completion of oral health risk assessments with patients, discussions about oral health and systemic links, and patient-specific oral health self-management goals. Fluoride varnish is also offered to each patient. In the second year of the collaborative, two additional RHCs from a third rural health system joined the collaborative. During year two of the collaborative, one of the participating teams began completing dental referrals. RHCs established relationships with dentists in the community and began sending referrals on behalf of patients.

After the dentist examines a mutual patient, a treatment report is sent to the medical office. If a patient does not keep their scheduled dental appointment, the dental office alerts the primary care provider so they can follow up with the patient the next time they visit the medical office. This process closes the health care loop for the patient and ensures recommended care is provided.

While the formal collaborative has now ended, PORH continues with ongoing data collection to assist clinics with continual improvement. Data are collected for each clinic and trend reports are created to identify the total number of patients eligible for risk assessments, self-management goals, and fluoride varnish versus patients who received the interventions. These trend reports are shared with each clinic, and tailored technical assistance is coordinated as needed.

As RHCs integrate and coordinate oral health, interest in incorporating oral health services in RHCs has grown across the state. Pennsylvania formally recognizes the certification of public health dental hygiene practitioners (PHDHP), a dental hygienist licensed to practice without supervision from a dentist in select locations. RHCs are one of the permitted locations. One RHC has added dental services to their scope of practice, outfitted a dental operatory, and hired a PHDHP to provide preventive oral health services such as dental cleanings and x-rays to patients. The PHDHP also serves as a patient navigator, connecting patients to general dentists and specialists for comprehensive examinations and restorative services. As some patients are accessing oral health care for the first time, it is anticipated that the integration of preventive oral health services could decrease emergency room visits due to dental pain.

PORH provides extensive tailored technical assistance to RHCs interested in including dental services in their practice. From assisting RHCs in contacting the Pennsylvania Department of Health (the state's regulatory agency) and the Pennsylvania Department of Human Services (the state's Medicaid agency) to working with Medicaid Managed Care Organizations to understanding the provider credentialing process, PORH supports RHCs across the state. A series of technical assistance toolkits and documents have been created to provide guidance and resources to RHCs that are integrating oral health services in their clinics.

Efficacy and impact: As we enter the fourth year of the Pennsylvania Rural Primary Care Oral Health Initiative, the 11 clinics that were formally involved in the MORE Care collaborative continue their emphasis on oral health integration and coordination. One health system opened two new RHCs. Prior to opening, staff members were trained so the integration and coordination of oral health care could start from day one. These clinics also report data to PORH on a monthly basis. Patients have come to expect oral

health to be included in their well visits. As new staff and providers join the clinics, they receive training on oral health, including risk assessments and fluoride varnish. As some providers have transitioned to new practices, they report that they continue to offer the same oral health services and in some cases have taught their colleagues about the value of oral health integration.

In addition, one RHC has integrated preventive oral health services using portable dental equipment and hired a public health dental hygiene practitioner. Patients who have gone years without dental services are now receiving preventive care and oral health education and dental referrals. More RHCs have shown interest in replicating this model of care.

Since the inception of the Pennsylvania Rural Primary Care Oral Health Initiative, PORH has engaged other partners across the state. When teaching medical providers and medical office staff about oral health, PORH utilizes the Pennsylvania Chapter of the

American Academy of Pediatrics' Healthy Teeth Healthy Children program. This presentation is approved for CME and discusses the concepts of early childhood caries etiology and prevention. In addition, PORH is an active stakeholder with the Pennsylvania Coalition for Oral Health and collaborates with the PA Head Start Association and the PA Association of Community Health Centers on oral health activities.

After working with all of these organizations in various capacities for several years, in 2019, the Pennsylvania Office of Rural Health joined the Family Oral Health Collective. This unified network is committed to working collaboratively to achieve the goal of ending dental disease in Pennsylvania. Using the power of collective action, the five organizations work together to strengthen, diversify, and unify oral health networks, build upon current strategies, and expand impact towards lasting systems change in Pennsylvania.

TELEHEALTH

Tooth BUDDS



Purpose: Tooth BUDDS is a school-based dental hygiene program that utilizes portable dental equipment and registered dental hygienists to provide free preventive dental hygiene services to children at the convenience of their school location. Services include dental screening, dental cleaning, fluoride varnish, sealants, silver diamine fluoride, and SMART (silver modified atraumatic restorative therapy) restorations. Tooth BUDDS also uses teledentistry to communicate the urgent restorative needs of children to their affiliated dentist for expedited treatment.

Summary: Tooth BUDDS, or Bringing Understanding of Dental Disease to Schools, is a 501(c)3 nonprofit organization founded in response to reported oral health disparities in rural Arizona. Tooth BUDDS has set its focus on the children of this region, who may receive professional dental cleanings and x-rays along with oral hygiene instruction, sealants, and fluoride treatments free of charge in their school setting. All services provided by the program target low-income, at-risk children grades pre-K through 12. Our overall vision is to decrease a child's pain and suffering from dental decay through education and prevention of oral disease at the convenience of their school location, thus allowing the child to thrive socially, physically, mentally, and academically.

Getting an annual dental visit has been classified as a Healthy People 2020 leading indicator. The objective is to “increase the proportion of children, adolescents, and adults who have used the oral health care system in the past year to 49 percent.”

The State of Arizona has responded to this leading indicator and devised plans for our state to increase public dental health care to its most rural and impoverished counties. One goal is to “increase the number and capacity of professionals who can provide oral health care for children and can promote good oral health practices for school-aged children.” To do this, Arizona must “increase the number of mid-level dental providers such as affiliated practice dental hygienists permitted by Arizona law and regulations to provide services in the rural areas and give families more options for dental care to mitigate barriers to access.”

Tooth BUDDS is a direct reflection of the oral health care goals set by the state of Arizona. To date, no

public dental health programs have existed in rural Graham and Greenlee counties. Traditional school-based preventive dental programs provide fluoride and sealants placed by a registered dental hygienist. Tooth BUDDS is staffed by affiliated practice dental hygienists who, with increased schooling and credentials, are licensed to provide all preventive care needs without the direct supervision of a dentist. This allows Tooth BUDDS to go into schools where children lack access to care and provide dental cleanings and x-rays along with the traditional sealants and fluoride. Tooth BUDDS takes it one step further by using silver diamine fluoride (SDF) varnish and SMART restorations. SDF not only strengthens teeth to prevent decay, it virtually stops active decay. SMART restorations seal arrested areas of decay from oxygen and food impaction, depleting any residual bacteria from their life source with no needles, drills, or sedation. This is a game-changer for children in rural Arizona whose parents are unable to get them to a dentist due to lack of funds, time off work, or accessibility of a provider.

Tooth BUDDS also uses teledentistry with the aid of MouthWatch technology to communicate the needs of children seen in remote areas instantaneously with their affiliated dentist. Intra-oral images are taken of the child's mouth, which are then uploaded to the dentist. This allows the dentist to review the images, make a diagnosis, and create a treatment plan. This benefits rural families because instead of two trips to the dentist, restorative treatment can be accomplished in one visit.

In conclusion, there are three main reasons people do not visit the dentist: fear, finances, and time. Tooth BUDDS addresses all three by stopping decay using SDF and SMART restorations, providing services free of charge through generous grant donations and community assistance, and taking dental equipment directly to schools, eliminating time off work for parents and/or time away from school.

Efficacy and impact:

Solomon Elementary School

Percent of children with decay
2017 = 68% → 2018 = 30%

Number of decayed teeth
2017 = 197 → 2018 = 76

** In one year, Tooth BUDDS reduced the rate of decay more than 50 percent in the rural community*

of Solomon, Ariz., using dental hygiene best practices, SDF, and SMART restorations.

2018: 1,267 children received preventive dental hygiene services

2019: 1,653 children received preventive dental hygiene services

2018: 864 teeth with active decay arrested with SDF

2019: 1,607 teeth with active decay arrested with SDF and SMART restorations

** Tooth BUDDS has been awarded the Create Tomorrow Award by the El Rio/Wright Center Virtual Health Research Fair, Unique Access to Care Award by the Arizona Dental Hygiene Association, and the Teledentistry Innovation Award at the 2019 New York State Dental Conference.*



CLINICAL

I-Smile

Purpose: I-Smile is a statewide program that connects children and families with dental, medical, and community resources to ensure a lifetime of health and wellness. I-Smile was created in 2006 to address legislation requiring Medicaid-enrolled children in Iowa to have a dental home. It is administered as part of Iowa's Title V maternal and child health program, which functions within all of Iowa's 99 counties.

Summary: I-Smile is the oral health component of Iowa's Title V maternal and child health program. The Iowa Department of Public Health (IDPH) manages I-Smile through contracts with 23 local public health organizations. Each organization has a designated number of counties referred to as their service area. A dental hygienist serves as the I-Smile coordinator for each service area, integrating oral health into the existing maternal and child health program infrastructure. All of Iowa's counties are included.

I-Smile coordinators serve as community liaisons regarding children's oral health. They are responsible for increasing awareness about the importance of oral health. This is done through developing partnerships with organizations and businesses; building relationships with dental and medical offices; representing oral health by participating on advisory boards and within community organizations; promoting oral health at community events and distributing materials; providing education and care coordination assistance to families to access dental care and other social services; and assuring availability of preventive services for children in public health locations. The I-Smile@School sealant program is also part of I-Smile, providing preventive dental services (screenings, fluoride and sealant applications, and education) in elementary schools with at least 40 percent or greater free/reduced lunch program rates. Iowa Department of Public Health staff work closely with I-Smile coordinators, providing technical assistance and conducting quarterly trainings. Department staff also develop program strategies, parameters, and policies, incorporating quality improvement within I-Smile to address changing programmatic and environmental needs.

Over the past 14 years, I-Smile has developed into a statewide dental public health infrastructure that had not previously existed. Preventive dental services are now routinely provided statewide for children at WIC clinics and Head Start centers, in addition to other public health locations. I-Smile coordinators participate on community advisory boards and workgroups, integrating oral health

with other health and social service opportunities. New state policies, such as a dental screening requirement for incoming kindergarten and ninth grade students, were enacted due to the presence of the local I-Smile systems to facilitate referrals to dentists for students and to oversee the school screening processes.

The IDPH school-based dental sealant program expanded from 27 to 92 counties and re-branded itself as the I-Smile@School program. A newer initiative, Cavity Free Iowa, is a public-private collaboration to increase the number of at-risk children up to the age of three years who receive preventive fluoride varnish applications during well-child medical exams. Cavity Free Iowa is promoted by I-Smile coordinators, who provide training and follow-up assistance. The presence and availability of local I-Smile coordinators has been an effective way to assure oral health is an integral part of the health and wellness of Iowa children.

Program challenges include reluctance of many dentists to accept Medicaid-enrolled patients and limited availability of dentists in rural counties. Another minor challenge has been adapting Iowa's dental hygiene workforce from traditional clinical practice to fulfill roles within public health focused on systems building. However, the interest of hygienists in this practice transition continues to expand.

Efficacy and impact: The I-Smile system has played a significant role in helping Medicaid-enrolled (ME) and other low-income children receive dental services. In 2019, 51,695 more ME children saw a dentist than in 2005, the year before I-Smile began. Additionally, four times more ME children received preventive care from I-Smile in public health settings such as WIC clinics and Head Start centers than in 2005. Sixty-one percent more Medicaid-enrolled children up to the age of three years received fluoride varnish applications from medical offices than in 2018.

Costs to Medicaid remain stable, even with an increased number of children receiving dental services each year. When adjusting for inflation and a 1 percent increase in Medicaid reimbursement rates in 2014, the average cost to Medicaid per child ages birth to 12 years in 2019 was \$171, up just \$20 from the average cost per child in 2005.

There is some evidence to suggest that the increase in preventive services provided through I-Smile is

reducing the rate of untreated decay for at-risk children. A 2019 survey of children at WIC found that 7 percent had untreated decay, which is a decline from a 2012 survey that found 11 percent of WIC-enrolled children with untreated decay. I-Smile@School data suggest that more children have a source of payment for dental care. In 2006, 25 percent of participants paid for dental care out of pocket. This has improved to just 10 percent in 2018.

Perhaps the best sign of I-Smile’s success is that it is woven within Iowa’s strong public health network and is well understood to be Iowa’s oral health program for children.

IMPROVING THE ORAL HEALTH OF IOWANS



The success of I-Smile™ is the result of a collaborative effort. It is the result of many years of hard work from all the people who have worked together to make this program a reality. It is the result of the many people who have supported this program, and the many people who have benefited from it.

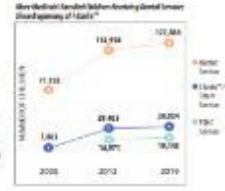
All the hard work of I-Smile™ and the many people who have supported it is the result of a collaborative effort. It is the result of many years of hard work from all the people who have worked together to make this program a reality. It is the result of the many people who have supported this program, and the many people who have benefited from it.

- 1. Dental safety and hygiene education for children
- 2. Increase availability of appointments for children
- 3. Increase awareness with a marketing focus on appointments and funding to expand a wider safety network
- 4. Building partnerships with local dental, pediatric, and public health organizations
- 5. Participating in community events and meetings
- 6. Encouraging oral health with health and dental education
- 7. Allowing oral health issues of family members through partnership with local health care providers
- 8. Training mobile office staff to provide oral screening and fluoride application for children of each child visit
- 9. Educating parents, children, and the public about oral health and preventing cavities, and
- 10. Encouraging children to have access to preventive care such as oral hygiene and fluoride application.

In 2018, 77% more Iowans visited a dentist to have a dental exam than in 2012. In 2018, 10% more Iowans visited a dentist to have a dental exam than in 2012. In 2018, 10% more Iowans visited a dentist to have a dental exam than in 2012.

However, 100% more Medicaid-enrolled children received care from dentists in 2018. Community in 2018, 10% more children received care from dentists. Community in 2018, 10% more children received care from dentists. Community in 2018, 10% more children received care from dentists.

More than 100% more Medicaid-enrolled children received care from dentists in 2018. Community in 2018, 10% more children received care from dentists. Community in 2018, 10% more children received care from dentists.



I-Smile Silver

Purpose: I-Smile Silver is a pilot project that connects adults with dental, medical, and community resources to ensure a lifetime of health and wellness. I-Smile Silver coordinators aim to achieve optimal oral health for adults and older Iowans by working within their local communities and health care systems to build a model that monitors the impact of dental disease on overall health outcomes and costs. The I-Smile Silver pilot project is modeled after the I-Smile dental home initiative for children.

Summary: There is no health without oral health. A healthy mouth is necessary to eat and drink healthy food, speak with confidence, and in some cases obtain employment. Iowa is an aging state. Currently, 16 percent of Iowa's population is over 65 years of age, expected to reach nearly 20 percent by 2050. Acknowledging a growing, vulnerable adult population, Lifelong Smile Coalition, a public-private partnership, was formed to ensure optimal access to oral health care for older adults. Recognizing the success of the I-Smile program for children and the growing need for education, medical/dental integration, and dental access for this population, in 2015, the I-Smile Silver pilot became a project initiative supported by Lifelong Smiles Coalition and funded by Delta Dental of Iowa Foundation.

The I-Smile Silver pilot project is managed by the Iowa Department of Public Health through contracts with Lee, Scott, and Webster County Health Departments, covering 10 counties that represent both urban and rural service areas. Similar to the I-Smile program for children, I-Smile Silver uses dental hygienists as community dental coordinators. Coordinators work with the I-Smile coordinator to provide community resources for dental education and prevention. While the program benefits all adults, I-Smile Silver focuses on assisting adults with dental needs who are most vulnerable. The project works specifically with community members enrolled in Medicaid and Medicare, as well as those who are managing chronic disease, living in long-term care settings, and/or who are underinsured.

Major barriers exist within communities and the health care system regarding access to and coordination of medically necessary dental care. Fragmentation of long-term care, medical, and dental delivery systems is one of the largest barriers for the I-Smile Silver project. The distinct separation of medical and dental delivery systems, such as insurance plans, billing and procedure coding, independently operated electronic records and data systems, and

disproportioned provider availability, creates barriers in the delivery of medical and dental treatment. The end result is a system that lacks a patient focus and overlooks the impact of oral disease on overall wellness and health care costs.

I-Smile Silver uses several strategies to address barriers to dental access within communities. One key I-Smile Silver strategy involves identifying local resources, dentists, and dental payment options for adults needing assistance. Through outreach and partnership, the coordinator develops a resource and referral network for patients with dental, medical, and/or social needs. I-Smile Silver coordinators provide care coordination services linking community members to resources to enable access to dental care. Building partnerships with those who serve the adult population - including nursing facilities, area agencies on aging, local DHS offices, hospital emergency departments, and the Senior Health Insurance Information Program - has been key to building the I-Smile Silver referral network and educating the community on the importance of oral health.

One of the most promising project strategies has been educating providers and leadership within medical/hospital systems on how improved oral health awareness impacts patients' health and costs to the health care system. Chronic disease management, non-ventilator hospital-acquired pneumonia, emergency department usage for dental-related disease, and other medically necessary dental treatment needs are all emerging opportunities for improving overall health through improved oral care and dental access.

Efficacy and impact: I-Smile Silver measures impact by evaluating program performance of education, engagement, collaboration, replication, and sustainability. Qualitative and quantitative measures are collected to consider both individual and population impact. Assisting individuals through care coordination is the foundation of the I-Smile and I-Smile Silver programs.

I-Smile Silver has provided dental, medical, and community resource referrals to 913 individuals. Care coordination referral success is measured by access to services and patient compliance upon follow up by the I-Smile Silver coordinator. Care coordination referrals have a success rate of 72 percent when referred as part of the I-Smile Silver program.

Patient stories are also collected to demonstrate the complexity of dental access and its impact on

overall health. A patient undergoing cancer treatment reported an ill-fitting denture, making it difficult to eat nutritious foods. The patient was losing weight and referred to the I-Smile Silver program for assistance. After contacting the patient, the I-Smile Silver coordinator learned that the patient was highly motivated to receive dental care but was unable to afford the cost of dentures due to co-payments for daily radiation therapy. The I-Smile Silver program partnered with Donated Dental Services, and a local dentist was found who would treat the patient at no cost. The client is now able to eat a healthy diet and focus on healing from radiation treatments.

Population impacts are gathered by each contractor through quarterly progress reports, summarizing activities inspired by the I-Smile Silver coordinator to create long-term change. A few examples of systems change within I-Smile Silver communities include:

1. Working in partnership with local federally qualified health centers to address community need for affordable denture services. A new model for providing denture and partial fabrication, including the use of 3-D printers for denture making, is being implemented in an I-Smile Silver community.
 2. Working within the community hospital system to address non-ventilator hospital-acquired pneumonia through improved oral hygiene protocols post-surgery.
 3. Creating a dental referral system for medical providers and health systems to assure patients receive medically necessary dental care.
 4. Collaborating with the University of Iowa College of Dentistry to assist with a study and tele-dentistry project to improve dental access in rural long-term care settings.
 5. Sustaining program funding through Medicaid reimbursement for preventive dental services provided as part of the I-Smile Silver program.
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St. Francis Mission Dental Clinic

Purpose: St. Francis Mission (SFM) operates a dental clinic as an outreach ministry to the Lakota people on the Rosebud Sioux Reservation. The mission will work on a sustainability plan, collaborating with the Rosebud Sioux Tribe to develop and submit a contract to the Indian Health Service (IHS) as a partner in providing dental health care on the Rosebud Sioux Reservation.

Summary: The goal for the dental clinic is to become self-sustaining within three years. The objectives are 1) collaborate with the Rosebud Sioux Tribe to develop a plan of action for oral health care, completing a feasibility study by the end of 2020; 2) conduct a strategic planning process to determine the role of the SFM Dental Clinic as a tribal contracting program so the roles, responsibilities, and financial commitment of SFM are clearly delineated; and 3) collaborate with the Rosebud Sioux Tribe to submit a contract to the Indian Health Service to operate and manage an oral health care clinic on the reservation by the end of 2021.

The reputation of the clinic is positive among tribal members, and the results indicate how local initiative, expertise, and dedication can solve serious health concerns. As a result, Rosebud Sioux Tribe leadership has approached the dental clinic about submitting a PL93-638 contract (638-contract) request to IHS to run the clinic at the Rosebud health care facility and the SFM clinic in St Francis. SFM staff would be retained, likely continuing current work with volunteer clinics, but the funds would be provided through the contract with IHS. These issues require further study so the objectives, feasibility study, and strategic planning process can garner agreement among tribal and SFM governing boards. This is considered an opportune time, as tribal leadership is very receptive to collaborating with the SFM Dental Clinic. The current tribal president, Rodney Bordeaux, served as SFM chief operations officer before his election, and he is well aware of tribal health needs and the successful work of the dental clinic in helping to address these needs.

SFM initiated these clinics in 2013 because at that time there were no dentists at the IHS dental clinic. IHS, by treaty and law, is charged with providing health care to all tribal members throughout the nation. For many reasons, inconsistent staffing at the IHS facility is an ongoing challenge associated more with underfunding of Indian health nationwide than with local issues. Additionally, the remote nature of the area is often not conducive to long-term commitments from public health or IHS medical

professionals. In 2013, SFM was able to mobilize volunteers from among its donors and regional universities that operate dental schools, such as Creighton University, the University of South Dakota, the University of Nebraska, Indiana University, and the University of Missouri-Kansas City to help address this critical health issue.

The success of these initial efforts led to SFM committing resources to establish the dental clinic as an ongoing ministry. Today, there are 12 one-week clinics offered each year, serving 1,200 to 1,700 children, youth, adults, and elders who would otherwise have no access to dental care. The clinics are staffed by volunteers, which in 2018 included 36 licensed dentists, 21 dental assistants, eight registered dental hygienists, and 68 dental students. Continuing care is offered through follow-up appointments that are necessary for preventative care.

These clinics have continued for six years and are organized and maintained by two SFM employees, both tribal members. Marty Jones, a registered dental hygienist, serves as program director, organizes all clinics, ensures needed supplies are available, and submits documentation for insurance reimbursement. She is assisted by Miranda McBride, who helps with patient records, appointment documentation, and administrative support. Both provide health education to local schools.

Efficacy and impact: The SFM Dental Clinic serves members of the Rosebud Sioux Tribe. There are more than 30,000 tribal members living in the five-county area of the original reservation, according to the tribe's enrollment office, with 42 percent under the age of 18. The SFM Dental Clinic primarily serves adult patients, having seen more than 1,152 adults in 2019. Sixty-eight children were seen at the children's specialty clinics. The clinic averages 1,500 patients per year in 12 clinics.

Statistical information on those served in 2019 includes:

- There are 2,743 persons entered in family files (adults, children, new patients, emergencies, completions)
- Total patients for 2019 (as of Aug. 1): 1,220
- Number of child patients for 2019: 68
- Number of new patients (Aug. 2018 to July 2019): 287
- Number of patients who have primary

dental insurance only: 715

- Number of patients who have secondary dental insurance: 3
- Number of patients without dental insurance: 502
- Number of patients without medical insurance: 1,220
- Number of patients who have primary dental insurance only: 715
- Number of patients without medical or dental insurance: 502

Since the rate of dental disease is high among both adults and children on the Rosebud Sioux Reservation, the SFM Dental Clinic provides a critical, consistent service that is not offered elsewhere.

Access to health care is basic to any improvement in a person's quality of life. According to the IHS data brief referenced earlier, poor oral health can have a negative effect on general health. For example, severe periodontal disease can adversely affect glycemic control in adults with diabetes, and there is a direct relationship between periodontal disease severity and diabetes complications. Advanced dental caries can cause pain and infection and result in problems with eating, chewing, smiling, and communication.

Having missing, discolored, or damaged teeth can impact a person's quality of life by lowering self-esteem and reducing opportunities for employment. Furthermore, adults with severe tooth loss may experience nutritional problems because they are less likely to meet current dietary recommendations.

For children, the benefits also outweigh the extreme results of tooth decay and disease. Access to dental care enhances their self-esteem, positively affects school attendance, increases nutritional benefits, promotes restful sleep, subdues attention problems, and improves socialization and overall



quality of life.

Smiles!

Purpose: The vision of the Smiles! program is to end preventable severe tooth decay. The program's mission is to maintain a sustainable dentistry resource that will serve the low-income children of Northern California who need safe sedation for dental treatment, provide prevention education, and promote oral health and healthy nutrition.

Program values include placing patients and their families at the center of treatment; supporting and promoting individual dignity, self-worth, and self-determination; providing confidential, culturally competent, multi-lingual services; continually improving outcomes and timelines; utilizing best practice standards in patient care; and supporting collaborations within the community that best meet patient needs.

Summary: Imagine a place where high-needs patients in rural areas can access safe, patient-focused dental treatment for severe tooth decay. Imagine that the parents receive prevention education and healthy foods from bilingual promotores de salud, or community health workers. Imagine that it is sustainable.

Through the hard work of visionaries partnering with champions and federally qualified health center leaders, this vision has become reality. In 2002, two health care advocates conducted a needs assessment in three rural California counties (Mendocino, Lake, and Sonoma) and created a sustainable model for providing dental treatment under general anesthesia for children with severe tooth decay.

With HRSA funding, they embarked on planning and research. In 2006, the capital campaign was launched, and with \$1.4 million in public-private funds raised, the stand-alone, AAAHC-accredited, CMS-approved nonprofit ambulatory surgery center was built.

The surgery center's two operating rooms are dedicated to dental treatment cases only. It has a three to five-week waitlist, versus one year in an urban research hospital. When the center opened, 450 patients were on the wait list. Today, more than 22,000 patients have been treated at the Pediatric Dental Initiative of the North Coast (DBA PDI Surgery Center), and more than 250 of them are special needs patients. While the needs assessment for PDI was done in only three counties, due to high need, patients now come from 33 northern California counties for treatment.

Transportation continues to be a barrier, although one insurance company now pays for transportation for families in 14 counties if they call ahead of time. When transportation assistance is needed last minute, PDI pays for cabs or picks up patients in the PDI car. Food scarcity and food deserts have also been barriers. To address this, PDI entered into a partnership with the regional food bank and provides a bag of healthy groceries to all families who come to the surgery center. Healthy food is combined with one-on-one motivational interviewing and prevention education provided at PDI. In addition, PDI promoters attend health fairs, homeless shelters, schools, and afterschool programs to educate children and caregivers.

FQHCs in 33 counties refer patients to PDI at no cost. PDI case managers help families navigate paperwork and pre-treatment procedures (including not eating after midnight the night before) and handle pre-authorizations to get paid for the work. PDI has clinical staff, as well as medical anesthesiologists and dentists who are paid a daily fee for their days at PDI.

These clinicians also work in other practices/hospitals, and we have found this reduces burnout. The clinician engagement levels at PDI are very high, as they are invested in PDI's mission, feel a greater sense of purpose, and enjoy the collegiality of the stand-alone surgery center setting, which is not hierarchical but intentionally team based. Many new ideas for patient care improvement come from staff.

PDI Surgery Center is also the dental home for more than 120 special needs patients up to the age of 25. Since the older population has different challenges, certain days are dedicated to this population. While PDI's typical patient is a 3.5-year-old child with more than 14 cavities who can use a pediatric dental chair, the average special needs patient requires larger eye surgery chairs, or padded wheelchairs that turn into a gurney.



PDI is a unique model that could be replicated to serve large geographic reaches. In PDI's case, patients come from more than half of California,

mostly rural, underserved areas. The partnerships we have built with rural dental providers and their staffs are amazing. Together, we work to integrate dental care into overall health and reduce the incidence of severe tooth decay. PDI's sustainability stems from specialization and volume.

Efficacy and impact: Since opening in 2008, PDI Surgery Center has treated more than 22,000 patients, including 250 special needs patients for whom PDI is their dental home for regular care. More than 20,000 families have received prevention education for PDI's health workers. We treat 10 patients per day in our two operatory rooms, with average case taking 1.5 hours. This is highly efficient for the amount of work done on an average of more than 14 decayed teeth. While 98 percent of our patients are on Medicaid, we are sustainable due to high volume, quality of care, and efficiencies thanks to our specialization in only one type of procedure.

Repeat patients have been reduced from 306 in 2012 to 146 in 2019. Of those, 45 were special needs patients. (Rather than recurrence/new tooth decay, this was for cleanings.) Employee and patient satisfaction are tracked weekly and are consistently high. Despite suffering loss of surgery days due to

the October 2017 and November 2019 Sonoma County wildfires, PDI has managed to get re-licensed following mandatory closures and maintain staffing, including supporting three staff members who lost their homes. Staff turnover is extremely low. Our annual budget is \$5 million. Fifteen percent is for prevention education, which does not have a billable code, so we fundraise.

In 2017, PDI won the Jefferson Award, which is a national recognition system highlighting public service. Sonoma County has adopted it to recognize individuals, nonprofits, board, commissions, or advisory bodies that best demonstrate "excellence in community leadership and civic engagement."

We are a CMS facility accredited by AAAHC, which we have always passed with high remarks every three years. PDI has already implemented social determinants of health. Our team addresses food insecurity, nutrition, dental hygiene education, and transportation, as well as connecting homeless individuals to resources and giving hotel vouchers if a family cannot make it back home on the day of treatment.

POLICY AND NATIONAL MODELS

Dental Therapy

Purpose: Dental therapy aims to improve access to dental care and oral health in rural and other underserved settings by increasing and diversifying the dental workforce and expanding the reach of the existing dental team into community-based settings. Because communities that lack access to dental care often also lack access to jobs and other economic opportunities, an associated goal is to provide job opportunities and diversify the oral health workforce to more closely match the communities served.

Summary: Dental therapists are highly trained oral health practitioners who work on an existing dental team under the supervision of a dentist. Along with providing education and preventive services, they are also able to perform common dental procedures, such as exams and filling cavities. Through the off-site supervision of a dentist, dental therapists are also able to deliver care in community-based settings in rural and underserved areas to better meet the needs of communities that do not have sufficient access to dental care. Dental therapists have been practicing in the U.S. for 15 years and are currently practicing or authorized in some or all settings in a dozen states.

Dental therapists first began practicing in the U.S. in rural tribal communities in Alaska, where tribal leaders saw high levels of unmet need for dental care. In the 15 years since dental therapists began working in Alaska, they have been successful at improving access to preventive dental care and reducing the need for extractions in both children and adults. Tens of thousands of people now have regular access to a dental provider who lives and works in their community in places where dental care has historically been scarce. Dental therapists often work in their home communities, helping overcome historical barriers related to lack of consistent dental providers. Working in their home communities also means dental therapists often speak the language and understand the culture of their patients, which allows them to establish a high level of trust and improve experiences and outcomes.

Seeing the success of dental therapy in Alaska, other states have since adopted this model. In 2009, Minnesota became the first state in the

lower 48 to authorize dental therapists. Dental therapists have been practicing for almost a decade in Minnesota and work where people across the state live: Forty-five percent of Minnesota residents live outside the metro area, where more than 40 percent of dental therapists are employed. Multiple evaluations and case studies have found that dental therapy is an economically viable way for dental clinics to provide needed care in rural communities.

Many dental therapists provide care in community and rural settings, either in clinics based in those settings or mobile dental clinics, where they can bring care to schools, community centers, nursing homes, and other places where a dental clinic may not be available.

Dental therapy has been shown to improve access to dental care, often expanding it into communities that have long gone with little or no needed care. It has also been shown to improve individual and population oral health. The model is cost-effective and offers opportunities for expanding dental care into rural communities, which encompass almost 60 percent of dental health professional shortage areas.

Efficacy and impact: Evaluations have shown that dental therapists enable dentists and community clinics to see more patients, reduce wait time for and travel time to appointments for rural patients, and generate additional revenue for clinics.

Additionally, a global review of more than 1,000 published studies and reports showed that dental therapists improve access to care, especially for children and other underserved populations, and provide care that is effective, competent, and cost-effective. A 10-year longitudinal study of the impact of dental therapists in rural communities in Alaska showed that dental therapists help improve access to and use of preventive dental care and reduce tooth extractions among both children and adults.

Delta Dental of Iowa Loan Repayment Program

Purpose: With a goal that all Iowans have optimal oral health and overall health, the purpose of the Delta Dental of Iowa (DDIA) Loan Repayment Program and the Fulfilling Iowa's Need for Dentists (FIND) Program is to increase access to dental care for underserved populations in designated dental shortage areas in Iowa. This includes a focus on individuals who are low income and Medicaid insured, handicapped or homebound, elderly, nursing home residents, homeless, refugees, or immigrants, as well as other vulnerable Iowans. Eighty-nine of Iowa's 99 counties are designated as high-priority areas for the loan repayment programs, primarily rural counties.

Summary: Both the DDIA Loan Repayment Program and the FIND Program provide dental education loan repayment to dentists who commit to provide care for vulnerable populations in rural and underserved communities. The DDIA Loan Repayment Program offers a \$50,000 award for the repayment of dental education debt to be used over a three-year grant period. This program was developed in 2002 and is funded solely by Delta Dental, offering one \$50,000 award per year. The FIND program is an expansion of the DDIA Loan Repayment Program. The FIND Program began in 2008 and works to stimulate community matching funds and promote dentist loan repayment to targeted communities in partnership with the state of Iowa. The FIND Program offers up to \$100,000 for dental education debt over a five-year period. This includes \$50,000 in funding from Delta Dental, \$25,000 in funding from the state of Iowa, and up to an additional \$25,000 in community match. A minimum of \$5,000 in community match is required. Up to four FIND awards are offered each year.

Both programs are open to dentists who are “fully trained and licensed; interested in a public health role, but are a partner or owner in a private-practice setting; committed to serving in a rural or underserved area in Iowa; working full time (minimum 32 hours/week); and willing to allocate 35 percent of patient load to the underserved during the program period.”

Interested dentists apply for the programs through an online grants management system coordinated by Delta Dental. Applications are due by July 1 of each year and include information about the dentist's interest in practicing in a rural, underserved area; their experience with public health dentistry; their community involvement; and their short-and long-term professional goals.

Letters of support and loan documentation are also required. Dentists are chosen by a selection committee (internal and external partners) each October with new awards starting January 1. Each recipient is required to submit quarterly reports to verify their services, including the number of underserved patients and services.

A significant factor of success for the FIND Program has been external partnerships, including those with the Iowa Area Development Group and the University of Iowa College of Dentistry and Dental Clinics. The University of Iowa has established an Office of Iowa Practice Opportunities (OIPO), which helps partner new dental graduates with current dentists who are seeking partners or would like to retire. Through their collaboration with local communities, the Iowa Area Development Group is able to connect new dentists to local businesses for program match and practice (building, equipment, etc.) funding, if needed.

The Iowa Dental Association is also a FIND Program partner and most recently has collaborated to include a full day “dentist transition” session in their 2020 annual state conference. This session will focus on dentists who are planning retirement or looking for a new associate and will feature the FIND Program, along with their new ADAPT Program to increase recruitment in underserved and rural areas. Fortunately, there have been minimal program challenges; however, dentist recruitment and matching dentists with communities can be difficult. Unless they are returning to their hometown, many new dentists (and spouses) are reluctant to set up a practice in rural communities.

In addition, retiring dentists are often hesitant to publicize their intent to leave due to the risk of losing staff or patients. The University of Iowa's OIPO and Iowa Area Development Group have helped with these challenges by working one-on-one with dentists and dental students and offering anonymity through the OIPO website. Recruitment has also improved with the addition of a dedicated consultant to coordinate loan repayment programs for Delta Dental. This has allowed more focused time to promote the program and engage with internal and external partners, including dental schools outside of Iowa.

Efficacy and impact: Since 2002, the DDIA Loan Repayment and FIND Programs have been successful in attracting new dentists, engaging

communities, and providing services to a wide range of underserved patients.

As part of an ongoing effort for quality improvement, Delta Dental staff conducted an environmental scan of other state and national (private and governmental) dental education loan repayment programs in late 2019. The results of this scan indicate that the Delta Dental programs compare favorably to other programs; however, areas of improvement were identified (funding amount, commitment term, community match) with changes planned for the 2021 application cycle.

Educational loan repayment awards have been provided to 52 dentists throughout Iowa. This includes 19 dentists through the three-year DDIA Loan Repayment Program and 33 dentists through the five-year FIND Program. Through the end of calendar year 2019, more than 588,000 services have been provided during 203,000 patient visits to underserved Iowans. All but five of these dentists have remained in Iowa and are still providing services.



Acknowledgements and more information

This section includes further information such as websites and contact information for the submissions listed within this compendium.

WORKFORCE DEVELOPMENT AND TRAINING

MOUTH CARE MATTERS

IOWA CAREGIVERS

LOCATION: WEST DES MOINES, IOWA

Submitted by:

Diane Findley, Executive Director Iowa CareGivers

Email Address: difindle@iowacaregiveres.org

Program Website: <https://www.iowacaregivers.org/education/mouth-care-matters.php#.Xk6zcmhKjIU>

Sources of Funding: MCM I is one of three major grant initiatives of the Lifelong Smiles Coalition and funded by Delta Dental of Iowa Foundation (DDIAF). MCM II Funding from Retirement Research Foundation and DDIAF. Additional funding from Polk County Health Department for Nurse training.

PHYSICIAN ASSISTANT PROGRAM TRAINING

UNIVERSITY OF UTAH PHYSICIAN ASSISTANT PROGRAM

LOCATION: SALT LAKE CITY, UTAH

Submitted by:

Michelle Martin, Oral Health Specialist

Utah Department of Health Oral Health Program

Email address: mlmartin@utah.gov

Sources of funding: University of Utah PA Program community engaged learning curriculum; the Utah Department of Health Maternal and Child Health Bureau through funding from the Maternal and Child Health Services Block Grant to the States (6B04MC31520), Health Resources and Services Administration Department of Health and Human Services, 2017-2019; Ute Tribe Head Start/Migrant Head Start through Administration of Children and Families, which is a division of the Department of Health & Human Services. It is a five-year non-competitive grant cycle. Some F12 varnish was donated by Ultradent dental supplier in Utah.

INTEGRATION OF CARE

PROJECT ZERO – WOMEN & INFANTS

NORTHERN ARIZONA UNIVERSITY LOCATION: FLAGSTAFF, ARIZONA

Submitted by

Dr. Denise Helm
Northern Arizona University
Email address: denise.helm@nau.edu

Sources of funding: Funds were part of Project Zero – Women & Infants, a Perinatal and Infant Oral Health Quality Improvement Project funded by the US Department of Health, Health Resources Services Administration grant #H47MC2918

MEDICAL ORAL EXPANDED CARE (MORE CARE)

CENTRAL OREGON HEALTH COUNCIL, WEEKS FAMILY MEDICINE, MOSAIC
MEDICAL EAST BEND CLINIC ST. CHARLES LA PINE FAMILY HEALTH
CLINIC, ST. CHARLES CENTER FOR WOMEN'S HEALTH
LOCATION: BEND, OREGON

Submitted by:

Donna Mills, Executive Director Central Oregon Health Council
Email address: donna.mills@cohealthcouncil.org

Sources of funding: Central Oregon Health Council is the main funder of the program, and the DentaQuest Partnership for Oral Health Advancement is providing in-kind staff resources and support.

PENNSYLVANIA RURAL PRIMARY CARE ORAL HEALTH INITIATIVE

PENNSYLVANIA OFFICE OF RURAL HEALTH
LOCATION: UNIVERSITY PARK, PENNSYLVANIA

Submitted by:

Kelly Braun, Dental Delivery Systems Coordinator
Pennsylvania Office of Rural Health
Email address: kub277@psu.edu
Program website: www.porh.psu.edu

Sources of funding: DentaQuest Partnership for Oral Health Advancement. This project was partially funded by the Pennsylvania Department of Health through the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under Grant T12HP27539: Grants to States to Support Oral Health Workforce Activities. This information or content and conclusions are those of the author and should not be construed as the official position or policy of nor should any endorsements be inferred by HRSA, HHS, or the U.S. Government

TELEHEALTH.

Tooth BUDDS

Tooth BUDDS

Location: Pima, Arizona

Submitted by:

MiQuel McRae,
Executive Director

Tooth BUDDS

Email address: miquel@toothbudds.org

Program website: www.toothbudds.org

Sources of funding: United Way of Graham and Greenlee Counties; Delta Dental Foundation of Arizona; Freeport McMoRan; Arizona Community Foundation; Arizona Complete Health; MouthWatch

POLICY AND NATIONAL MODELS

DENTAL THERAPY

NATIONAL PARTNERSHIP FOR

DENTAL THERAPY LOCATION:

NATIONAL

Submitted by:

Kasey Wilson, Policy Analyst Community Catalyst

Email address: kwilson@communitycatalyst.org

Program website: <https://www.dentaltherapy.org/>

LOAN REPAYMENT PROGRAM

Delta Dental of Iowa State: Iowa

Submitted by:

Sara Schlievert, Loan Repayment

Program Consultant

Delta Dental of Iowa

Email Address: sschlievert@deltadentalia.com

Program website: www.iowafindproject.com

Sources of funding: Delta Dental of Iowa: Up to \$250,000 per year for the DDIA Loan Repayment Program and FIND Program (\$50,000/applicant/year); State of Iowa: \$100,000 (\$50,000/applicant/year – FIND only); Community Match: Up to \$25,000/applicant/year – FIND only

CLINICAL

I-SMILE

IOWA DEPARTMENT OF PUBLIC HEALTH
STATE: IOWA

Submitted by:

Tracy Rodgers, Executive Officer Iowa Department of Public Health

Email address: tracy.rodgers@idph.iowa.gov

Sources of funding: State of Iowa Appropriations and Centers for Medicare and Medicaid Services (CMS) (federal funding)

I-SMILE SILVER

IOWA DEPARTMENT OF PUBLIC
HEALTH LOCATION: DES MOINES,
IOWA

Submitted by:

Katie McBurney, Oral Health
Consultant Iowa Department of Public
Health

Email address: katie.mcburney@idph.iowa.gov

Sources of funding: Delta Dental of Iowa Foundation and Health Resources and Service Administration

ST. FRANCIS MISSION DENTAL CLINIC

ST. FRANCIS MISSION DENTAL CLINIC
LOCATION: ST. FRANCIS, SOUTH DAKOTA

Submitted by:

William Long, Advancement Director St. Francis Mission

Email address: William.longiv@sfmission.net

Program website: <https://www.sfmission.org/>

SMILES!

PDI SURGERY CENTER
LOCATION: WINDSOR, CALIFORNIA

Submitted by:

Viveka Rydell-Anderson, CEO

PDI Surgery Center

Email address: viveka@pdisurgerycenter.org

Program website: www.pdisurgerycenter.org

Sources of funding: HRSA, the California Endowment, First 5 California, Kaiser Permanente, Sisters of Orange/St. Joseph's Health, Sutter Foundation, private investors, foundations, banks, etc.