Strategies to Increase Access to Oral Health Services in Humboldt County

CALIFORNIA CENTER FOR RURAL POLICY AT CAL POLY HUMBOLDT

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TABLE OF CONTENTS

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EXECUTIVE SUMMARY

In 2021 through 2022, in collaboration with the Humboldt County Department of Health and Human Services- Public Health Branch, the California Center for Rural Policy (CCRP) conducted research to identify strategies to adequately meet the demand for oral health services in the county, prioritize strategies to increase access to oral health care, and make recommendations for future action.

Key Strategies Identified:

- Expand clinics, providers, and mobile services.
- Workforce development focused on oral health.
- Teledentistry and virtual dental homes.
- Medical-dental integration.
- Oral health-focused care coordination.
- Preventive oral health care in community-based settings.

Top Three Prioritized Strategies:

- Expand clinics, providers, and mobile services.
- Workforce development focused on oral health.
- Medical-dental integration.

Landscape Analysis Highlights:

- In Humboldt County, six dental clinics operated by five organizations accept Medi-Cal Dental. The clinics are: K'ima:w Dental Clinic (Hoopa), United Indian Health Services (Arcata), Open Door Community Health Centers (Eureka and Fortuna), Redwoods Rural Health Center (Redway), and Southern Trinity Health Services (Scotia).
- Humboldt County's 2020 estimated population size was 136,463, with 55,202 of those people on Medi-Cal.
- Each dental clinic would have an average patient load of **9,200** if they were serving the total Medi-Cal Dental population in Humboldt County.
- Forty-five (45) private practice dentists are currently serving Humboldt County residents. Of the 36 that responded to the survey, none accept Medi-Cal Dental.
- Each private practice dentist has an average patient load of **1,806.**
- Utilizing the average U.S. dentist to patient ratio - **1631 to 1** - it can be estimated that roughly **34** full time dentists are needed to adequately serve Humboldt County's population on Medi-Cal, 50 full time dentists are needed to adequately serve the rest of

Humboldt County's population, and in total, **84** dentists to adequately serve the county as a whole.[1]

- Approximately 40% of private practice dentists in Humboldt County are either considering or are unsure about retirement in the next five years.
- Humboldt County's rate of emergency department visits for non-traumatic dental conditions is 1.89 times the state average.
- The proportion of emergency visits for 18–34-year-olds for Humboldt County is 3.22 times the state average.

What We Learned From a Survey of Low-income Adults on Medi-Cal Dental:

- Almost ⅔ of survey respondents (64%) reported more than a year since their last in-person dental visit.
- Over 51% self-reported they have decay, 39% have pain, and 38% are missing teeth.
- Forty-six (46%) percent cannot pay for care, 42% have insurance difficulties, 35% have difficulties traveling outside the county for care, 26% have transportation difficulties, and 22% did not know who to call for care.
- Thirteen percent (13%) have extracted one tooth and 23% have extracted two or more.

Recommendations:

- Work with local education and other community partners to explore the feasibility of offering a dental hygienist program in Humboldt County.
- Support continued conversations and collaboration between partners through the Humboldt County Dental Advisory Group.
- Support the transition of the Oral Health Leadership Team (OHLT) into the Oral Health Steering Committee and Subcommittees.
- Work with small business development organizations to support retiring private practice dentists in Humboldt County to successfully sell and transition their practices to the next generation of dentists.
- Build robust Care Coordination / Patient Navigation programs to connect families with oral health care in and out of Humboldt County.
- Increase the number of active registered dental hygienists in alternative practice in Humboldt County.
- Build upon medical-dental integration efforts across the county.
- Gather information from local oral health professionals about their interest in and/or reservations about teledentistry and virtual dental home strategies.
- Utilize the Smile Humboldt website to house oral health resources tailored to a variety of audiences to support community conversations about the need for more oral health

[1] American Dental Association, 2021.

services and to share information broadly about daily practices that promote good oral health.
- Continue efforts to provide school-based oral health education to promote daily practices to take care of teeth in between visits to the dentist.
- Support efforts by the Humboldt County Office of Education to create awareness about oral health career opportunities for the K-12 population.
- Support efforts to expand clinics and mobile dental vans and recruit oral health professionals to Humboldt County.

METHODS

Both primary and secondary data sources were utilized to create the report. Primary data sources focused on input and information from individuals residing in Humboldt County and included:

1) Interviews
2) Surveys
3) Reports
    a) *Humboldt County Oral Health Needs Assessment*, 2018
    b) *Humboldt County Oral Health Improvement Plan,* 2018
4) Meetings with the Humboldt County Oral Health Leadership Team and the Humboldt County Dental Advisory Groups, 2021-2022
5) Humboldt County Oral Health Catalyst Meetings (3/10/2022, 4/20/2022, 6/02/2022)

The following secondary data sources were analyzed for the report:

- Partnership HealthPlan data on Humboldt County residents enrolled in Medi-Cal
- Oral Health in America report (2021). National Institute of Dental and Craniofacial Research
- U.S. Census Data (2019). American Community Survey.
- Rural Oral Health Toolkit. Rural Health Information Hub (RHIhub).
- Refer to Appendices for additional data sources.

Interviews

In the summer of 2021, the California Center for Rural Policy in partnership with Humboldt County Department of Health and Human Services - Public Health Branch conducted a series of interviews with a total of over 30 organizations and departments. The interviews included four organizations that manage dental clinics currently providing dental care for this target population of adults in Humboldt County, and the other 27 interviewed were organizations that either work directly with the target population or could provide insight into the workforce or policy/payment structures needed to increase dental capacity.

The purpose of the interviews was to get insight on topics such as demand, payment structures, and innovative strategies to expand dental care for adults in the county. Table 1 includes a list of the organizations interviewed.

Figure 1. List of Organizations Interviewed

Current Dental Providers Accepting Medi-Cal	Work with Adults Accessing Care	Insight on Workforce Needs & Policy Structure
Open Door Community Health Centers	Humboldt County Department of Health and Human Services - Public Health Branch, Social Services Branch, Behavioral Health Branch, Legislative and Policy Program, and Veterans Services	City of Eureka
Redwoods Rural Health Center	Providence St. Joseph Hospital Eureka - CARE Network, Emergency Department, Oncology Department, Head, Neck, and Throat Department	Humboldt County Office of Education
United Indian Health Services	Redwood Community Action Agency	Humboldt County Department of Health and Human Services
K'ima:w Medical Center	Waterfront Recovery Services	Delta Dental - Smile California
	Blue Lake Rancheria	Dr. Ronnie Brown
	Church of the Joyful Healer	Dr. J. Kumar
	AJ Transitional Housing	Humboldt Independent Practice Association
	Mobile Intervention and Services Team Eureka	
	UPLIFT Eureka	
	Humboldt County Correctional Facility	

Surveys

Two surveys were administered, and the results used as primary data for this report. The first was conducted in 2020 and targeted the County Medical Services Program (CMSP) population. This survey was administered at eight locations throughout Humboldt County and was completed by 311 adult community members. The survey gathered insight on how successful adults are in accessing dental care, what their needs are, and how severe the demand is for dental services in the county. The survey was administered at the following locations:

- Humboldt County Correctional Facility
- Social Services Branch
- Veterans Medical Center
- Waterfront Recovery Services
- Betty's Blue Angel Village
- Saint Vincent de Paul
- Women's Mission Shelter
- Men's Mission Shelter

The second survey was conducted by the Humboldt County Department of Health and Human Services - Public Health Branch in 2021 and surveyed private practice dentists providing dental care. The survey was completed by 80% of dentists in practice and included questions focused on whether or not they are accepting new patients, how many of their patients pay out of pocket, and whether or not they are considering retirement.

In 2018, the California Center for Rural Policy (CCRP) completed the *Humboldt County Oral Health Needs Assessment* in collaboration with the Humboldt County Department of Health & Human Services- Public Health Branch. The report was made possible by Proposition 56 funding and focused on the status of oral health within the county. The needs assessment included a list of strengths and weaknesses of Humboldt County's oral health system of care. The needs assessment is referenced in the report and is an additional source of primary data.

In 2019, the Department of Health and Human Services, Public Health Branch created the *Humboldt County Oral Health Strategic Plan* 2019-2022. The purpose of the plan was to systematically address disparities related to oral health in the county. The plan was informed by the *Humboldt County Oral Health Needs Assessment* created the year prior, as mentioned above. The central goals of the plan were to reduce the rates of untreated decay in the 0-5 population, improve the return rate of the Kindergarten Oral Health Assessment, increase oral health literacy, and improve access to preventive healthcare.[2]

[2] Humboldt County Oral Health Strategic Plan, 2019-2022.

During January and February of 2021, CCRP gathered input from both the Humboldt County Dental Advisory Group (DAG) as well as the Oral Health Leadership Team (OHLT). Utilizing input previously provided by these community coalitions, CCRP developed a presentation outlining select innovative strategies to increase access to oral health services for adults in the county. The strategies presented are all outlined in the strategies section below. CCRP asked DAG and OHLT members to prioritize which three strategies they thought would (1) be the most feasible and (2) have the most impact through a polling exercise. Results showed that more than three-quarters (75%) of both groups ranked expansion of clinics, providers, and mobile services as the top strategy to prioritize, followed by more than half of both groups ranking workforce development as the second most important strategy.

During the Spring of 2022, the City of Eureka, the California Center for Rural Policy, and the Humboldt County Department of Health & Human Services hosted three oral health catalyst meetings. (60, 32, 25 participants, respectively). The purpose of the first oral health catalyst meeting was to bring community leaders together and address the limited access of dental care in Humboldt County. Topics included the county's need for a second oral surgeon, workforce development, and successes and challenges for the clinics in Humboldt County that accept Medi-Cal Dental.

Based on conversations and input from the first oral health catalyst meeting, two additional oral health catalyst workgroups were hosted. The second meeting included three focus areas, with different stakeholders collaborating in breakout groups to answer questions. The focus areas were funding, infrastructure, and workforce. Some of the questions included:

- What do we need to understand about how dental services are funded? (funding)
- What do we need funding for in the short term and in the long term? (funding)
- Who are the partners we need to grow our oral health care workforce? (workforce)
- What workforce development strategies will pay off long-term? (workforce)
- Given the number of dentists needed - if we were to recruit 10-20 right now, what do we need to make sure we have in place for them to move here? (infrastructure)
- Professionals often come with families, what services and infrastructure do we need to create the necessary environment to include their families? (infrastructure)

The third oral health catalyst workgroup meeting consisted of the same structure as the second. However, participants chose one of three new oral health subcommittees. Subcommittees were created using input from the previous oral health catalyst meetings. The subcommittees focused on the following topics: succession planning for retiring dentists, expansion of oral health workforce and career pathways, and building an oral health toolkit. Participants were asked to choose their preferred subcommittee and asked to answer questions for the purpose of beginning to develop a basic subcommittee structure. The third meeting also included a presentation from

the Humboldt County Department of Health & Human Services- Public Health Branch to evolve the existing Oral Health Leadership Team into the Oral Health Steering Committee. The Oral Health Steering Committee will meet quarterly and provide strategic guidance and advice to the subcommittees as well as an environment for collaboration on broader oral health issues.

LANDSCAPE

Oral health is an essential component to overall health and well-being. Over the past 30 years, research on the federal level has shown how oral health and overall health are inextricably linked.[3][4] Such examples include the mouth being a portal of entry for microbial infections and associations linking periodontal disease with conditions such as diabetes, cardiovascular disease, stroke, and adverse pregnancy outcomes. Studies have also shown that impaired oral health can also have social implications, including negative impacts on psychological status, sleep, social interactions, school, and work. As impaired oral health can be the determinant in negative social outcomes, so too can social outcomes be the determinant of an individual's oral health.

Demographic and socioeconomic factors are known to mold health experiences. Distinct communities in the country experience oral health differently, whether based on age, economic status, proximity to providers, or a number of other social determinants.[5] Assimilating cultural, environmental, and commercial characteristics is critical when examining community health outcomes. For rural communities, environmental factors such as the characteristics of health providers and care delivery systems play a huge role in the community's ability to access care.

Inadequate access to dental care adversely impacts millions of families in the country, and even more so in rural areas. Outcomes such as untreated disease and pain are more common in areas that qualify as Dental Health Professional Shortage Areas (HPSA); rural areas account for more than two-thirds of HPSAs with only half of dental needs being met for the communities.[6] Additionally, populations served by Indian Health Services have particularly acute shortages. It is estimated that at least 10,000 additional dental health practitioners are needed to fill these gaps. Certain programs address lack of access to care for children and youth, however adults, either on Medi-Cal Dental or with no dental insurance coverage, have significant unmet oral health needs.

[3] U.S. General Surgeon's Report on Oral Health, 2000.
[4] Oral Health in America: Advances and Challenges, 2021.
[5] Ibid.
[6] Ibid.

Mid-level professionals such as registered dental hygienists and registered dental hygienists in alternative practice play significant roles in providing access to care for communities in Humboldt County. Mid-level professionals support dentists as they are able to deliver oral health screenings and services to high-risk patients under a dentist's supervision. As rural areas account for higher proportions of health professional shortage areas, rural counties such as Humboldt utilize these professionals to augment existing efforts as dentists are not as abundant. Taking this into consideration, recommendations have been made to explore increasing the quantity and capacity of these mid-level professionals.[7]

The aforementioned challenges to oral health care in the country speak to the experiences of adults on Medi-Cal Dental in Humboldt County, a sparsely populated rural county designated as a Dental Health Professional Shortage Area. For adults on Medi-Cal Dental, accessing oral health care can be both intimidating and frustrating for various reasons. Some factors that impact dental care access include a lack of providers who accept Medi-Cal Dental, clinics that do accept Medi-Cal Dental are booked out for months and/or not accepting new adult patients, transportation challenges for patients in outlying areas, and long wait times for appointments. The difficulty in accessing routine dental care in Humboldt impacts when and why adults seek care, and often care is only sought when a person is experiencing pain.

As discussed above, since routine preventive dental care in the county is limited for adults on Medi-Cal Dental, many individuals wait to access oral health care until they start experiencing pain. This is evidenced by high rates of emergency room visits for non-traumatic dental conditions by adults in Humboldt County.

Furthermore, most dental clinics that serve adults on Medi-Cal Dental run close to or beyond their capacity to bring on new patients. A lack of preventive care, coupled with a limited capacity to serve low-income populations and transportation barriers, means that many adults on Medi-Cal Dental do not have adequate opportunity to access care locally and remain in pain. In interviews conducted for this report, a recurrent theme was that adults on Medi-Cal Dental in Humboldt County have to leave the county to receive care. For many adults this means at least a three-hour drive to a neighboring county, possibly more.

A survey recently conducted by the Humboldt County Department of Health and Human Services (DHHS) Public Health Branch in partnership with the California Center for Rural Policy (CCRP) at Cal Poly Humboldt gives a quantitative look into experiences related to oral health for adults on Medi-Cal Dental.

During 2020, the DHHS Public Health Branch in partnership with CCRP surveyed a subpopulation of adults. The County Medical Services Program provides health coverage for

[7] Humboldt County Oral Health Needs Assessment, 2018.

uninsured low-income, indigent adults that are not otherwise eligible for other publicly funded health care programs. The target audience surveyed were adults aged 18 to 64 with complex health or behavioral health conditions that have housing and/or transportation challenges that impede their ability to obtain necessary health care services and/or formerly incarcerated adults with health conditions. A total of 311 surveys were completed from locations across the county (see page 8).

Survey respondents, in general, do not access dental care on a regular basis; 64% say it has been longer than a year since their last in-person dental visit. The need for dental services is significant; only 17% said they had no dental problems. Over 51% self-reported they have decay, 39% have pain, and 38% are missing teeth. Despite the evident need for dental care, adults in this population perceive significant difficulties when trying to get care and only 9% say they had no difficulties; 46% cannot pay for care, 42% have insurance difficulties, 35% have difficulties traveling outside the county for care, 26% have transportation difficulties, and 22% did not know who to call for care. Many of the survey respondents have pulled their own teeth; 13% have extracted one tooth and 23% have extracted two or more.[8] These results highlight how limited access to dental care can have significant consequences.

Medi-Cal Dental has comprehensive dental benefits such as exams, x-rays, cleanings, fluoride treatments, fillings, dentures, some root canals, and other medically necessary dental services. There were 55,202 Medi-Cal recipients served in Humboldt County during 2020.[9] With the county's 2020 population estimated at 136,463, 40% of Humboldt County residents are on Medi-Cal. Comparing Humboldt's rate to the State of California's rate during 2020 shows that Humboldt (40%) has a higher proportion of the population on Medi-Cal than the state average (34%).[10] During 2020, Humboldt's patient to clinic ratio for their Medi-Cal Dental eligible population was 9,200 to 1. Humboldt County also has a higher proportion of the population without health insurance (8.2%) than the state average (7.5%).[11]

The number of brick-and-mortar clinics or dental offices in an area can help to determine how accessible oral health care is to a community. In Humboldt County, six dental clinics are managed by five agencies, all of which accept Medi-Cal Dental and provide various oral health services for adults. The clinics include: K'ima:w Dental Clinic (Hoopa), United Indian Health Services (Arcata), Open Door Community Health Centers (Eureka and Fortuna), Redwoods Rural Health Center (Redway), and Southern Trinity Health Services (Scotia). The first four service providers listed above are designated by the United States as Federally Qualified Health

[8] Surveys administered to CMSP subpopulation, 2021.
[9] Partnership HealthPlan of California, 2020.
[10] Monthly Medi-Cal enrollment for December 2020 was used for this calculation. https://www.dhcs.ca.gov/dataandstats/Pages/Medi-Cal-Eligibility-Statistics.aspx
[11] U.S. Census Bureau (2019). American Community Survey.

Centers (FQHC), thus they receive funding from the government to serve underserved populations. The FQHCs generally are paid on a per encounter rate, a flat rate for every visit. Each of these clinics tend to only serve individuals who live within specific geographic service areas located around the clinic. In addition, the two Tribal clinics (K'ima:w Dental and United Indian Health Services) only accept those who are Tribally affiliated or are related to an individual who is. The Humboldt County Correctional Facility has a dental clinic for the patients at the facility. This clinic is open one day a week and focuses on extractions and other urgent dental procedures.

According to interviews conducted for the recent County Medical Services Program project, there is limited access to oral health services across the board for adults on Medi-Cal Dental. The clinics accept children for all types of services, as well as adult patients on an emergency basis, however preventive and restorative services for adults are limited. It was indicated that access to care was connected to dental workforce shortages and uncertainty that the Medi-Cal Dental carve out cannot be counted on. Clinic representatives described a dynamic and changing environment related to their capacity to accept new patients. At one point in time, the clinic will be accepting new patients, and at another point, the window will be closed. Clinics must constantly adapt to shifting staffing levels as well as patient loads, meaning that the capacity to provide care to new adult patients is dynamic.

According to the 2021 Humboldt County survey of local dentists, there are 45 private practice dentists in the county and no private practice dental office currently accepts Medi-Cal Dental insurance. Thirty-six dentists responded to the survey. The goal of the survey was to better understand the workforce capacity of Humboldt's private practice dental practices.

The survey outlined an ever growing concern among residents in Humboldt County - the impending retirement of dental practitioners. More than 60% of the private practice dentists in the county have been practicing for 20 years or more.

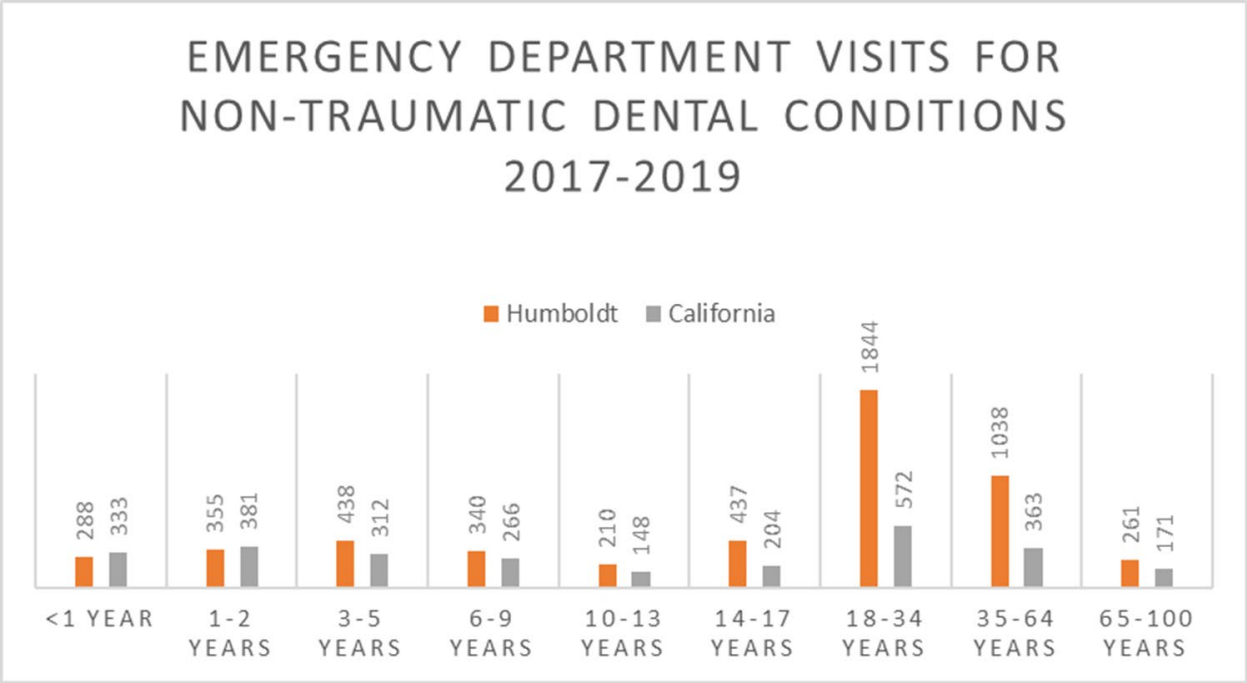
When asked whether they are considering retirement, 53% of the dentists surveyed are either considering it or are not sure about retiring in the next five years. To illustrate the concern further, if 12 dental practices closed tomorrow then roughly 18,000 patients would need to find a new dentist, other dental professionals would need to find employment, and 12 dental offices would be open in the commercial real estate market.[12]

Humboldt County's aforementioned limited access to routine dental care results in its overuse and high rates of hospital emergency department visits. Dental care provided through emergency departments is often palliative in nature, thus 90% of patients end up getting prescribed pain

[12] Humboldt County Department of Health and Human Services. Survey of Humboldt County Private Practice Dentists (2021).

medication or antibiotics.[13] Recent data from 2017 to 2019, provided by the California Department of Public Health - Office of Oral Health - showed Humboldt County's rate of emergency department visits for non-traumatic dental conditions as 1.89 times the State of California's rate. Another significant disparity between the state and county lies in the proportions of emergency visits for 18–34-year-olds; Humboldt's rate for those aged 18-34 is 3.22 times the state rate.

Figure 2. Emergency Department Visits for Non-Traumatic Dental Conditions, 2017-2019, Humboldt County



STRATEGIES

WORKFORCE DEVELOPMENT

The United States continues to experience a dental health professional shortage, which impacts millions of people and plays a large role in why dental care is inaccessible. According to *Oral Health in America* - a report co-published by the U.S. Surgeon General, the National Institutes of Health, and the National Institute of Dental and Craniofacial Research in 2021 - some estimate at least 10,000 additional dental health practitioners are needed to fill the gaps in the workforce.

Rural areas commonly face workforce shortages for dental care professionals, which in turn can impact the ability for rural residents to access needed dental services. Rural areas account for

[13] Oral Health in America (2021).

more than two-thirds of workforce shortage areas. Traditional barriers to retaining a strong workforce include low private and public reimbursement rates for dental services and limited educational opportunities for mid-level professionals (registered dental hygienists, and registered dental hygienists in alternative practice). In order to combat dental workforce shortages and increase access to care in rural areas, communities are implementing workforce development strategies. Workforce development healthcare models can be summarized as methods to either expand or augment existing and potential workers to effectively provide care within their respective licensing capabilities.

Rural communities often utilize workforce development models to recruit and retain dental professionals such as dentists, however, innovation within these traditional models of workforce development may be called for in remote, rural communities.[14] Such examples include increasing the capacity of mid-level professionals, collaborative recruitment of dental professionals, and expansion of residency programs and pipeline models.

Existing Workforce Development Efforts

As referenced above, based on interviews with the dental clinic directors, the staffing level for dental professionals has a significant impact on the number of clients the clinic can serve. Staffing issues are often exacerbated in rural communities; shortages in staff substantially impact a clinic's ability to provide the services necessary for their community. In many cases, clinics end up prioritizing serving certain populations based on the size of their dental workforce. For instance, the clinics in Humboldt County prioritize children and emergency procedures, with very few new patient appointments available for adults. Providers have trouble recruiting and retaining an adequate amount of staff. Nonetheless, the situation is dynamic, with the number of full-time equivalents in constant flux. To counteract barriers to workforce development, the clinics make a great deal of effort in providing incentives to possible recruits (see below for details).

For the purposes of recruiting and retaining oral health professionals in Humboldt County, three of the local FQHCs shared their experiences around the recruitment and retention of dentists through an oral health care workforce survey.[15] As both recruiting and retaining professionals in the county is a challenge, these FQHCs find it necessary to offer additional supports for dentists as incentives for them to work in a rural setting. As of 2018, the following additional supports were offered:

- Three FQHCs offer temporary housing

[14] Workforce Model, Rural Oral Health Toolkit (https://www.ruralhealthinfo.org/toolkits/oral-health/2/workforce-model)
[15] Humboldt County Oral Health Needs Assessment, 2018.

- Two FQHCs offer signing bonuses
- Two FQHCs offer assistance with loan forgiveness
- Two FQHCs offer relocation expenses
- One FQHC offers permanent housing
- One FQHC offers mileage

Provided through the Humboldt County Office of Education, the Oral Health-Careers Exploration Summer Institute (OHESI) program is a free two-week intensive summer educational program during which students learn about oral health care, dentistry, and career options, all the while earning college credit.[16] The program also provides opportunities to job shadow at local dental facilities; students are able to observe what different dental professions look like in a real work environment. OHESI is currently being scheduled for the summer of 2023, as the COVID-19 pandemic halted the implementation of the program.

EXPANSION OF CLINICS, PROVIDERS, AND MOBILE DENTAL

In an effort to make dental care more accessible, it is important for rural communities to not get caught up in focusing on outsourcing as the sole solution to the problem. Albeit expensive, communities can also focus on expanding the services already available in their area. This can be achieved through seeking out methods to expand the number of providers in an area who accept Medi-Cal Dental, as well as expanding the reach of clinics within their respective areas.

In relation to Humboldt County, expanding the reach of clinics is dependent upon the number of FQHCs that are allowed in one service area. The Health Resources and Services Administration (HRSA) has guidance on service area overlap although allowing it if specific criteria are met. Criteria includes early identification of potential overlap, utilization of standard data to define service area and unmet needs, and a site visit by HRSA. Internal procedures to ease the process include approval by the FQHC Board of Directors and a letter of support from relevant FQHCs.

A common strategy that clinics have implemented to increase the reach of their services is through mobile dental.[17] This strategy consists of delivering dental services through dental vans or portable clinics in population centers such as schools. Mobile dental vans offer access to care for underserved residents in rural areas as they provide opportunity to deliver services in hard-to-reach areas. The type of services offered through mobile dental include dental exams, education, and dental sealants. As mobile dental focuses on community access to preventive care, it has significant implications for reducing emergency room visits for dental emergencies.

[16] https://hcoe.org/ohesi/
[17] Rural Oral Health Toolkit

Existing Expansion Efforts in Humboldt County

Clinics in Humboldt County have made significant strides with mobile dental offerings as dental vans and satellite clinics are utilized by three of the clinics that serve the Medi-Cal Dental population. The Burre Dental Clinic - owned and operated through Open Door Community Health Centers - manages a mobile dental van. The van is primarily school-based and travels to schools throughout the county, reaching roughly three to four schools per year depending on the level of engagement with the van and the needs of the children who access services through the van. The van parks at one school and stays there until all children's' treatment plans are completed. All children have the opportunity to receive a variety of services, regardless of their parent or guardian's ability to pay. Services range from exams, x-rays, cleanings, fillings, extractions, and oral health education.

Redwoods Rural Health Center (RRHC) provides high quality healthcare services to the communities of Southern Humboldt, regardless of socioeconomic status. Similar to the Burre Dental Clinic, Redwoods Rural operates a mobile dental van, providing oral health care to students at schools in the southern part of the county. Since beginning to utilize the dental van, Redwoods Rural was able to reach eight different schools and children in very remote areas of Humboldt County.

United Indian Health Services (UIHS) - incorporated as a nonprofit in 1970 - first started offering on-site dental services close to 50 years ago. UIHS serves Tribal members from every Rancheria and Reservation in Humboldt and Del Norte Counties. Considering that some Tribal populations in Humboldt and Del Norte Counties reside in rural, remote areas, satellite clinics, such as the one in Weitchpec, are an effective strategy for reaching communities who might not receive care. UIHS' portable dental services help reach areas in the county with no electricity or phones.

A very recent effort in clinic expansion comes from Open Door's very own Burre Dental Clinic. The expansion is coming from the Consolidated Appropriations Act, which is earmarking $11.5 million for community projects in Northern California. One million of this funding will be going to Open Door to expand stations for care, one additional lab, a new call center, and administrative offices at the Burre Clinic. With this funding, Open Door is hoping to increase capacity by up to 8,000 visits per year. A portion of the funding will also be going to recruitment efforts towards dentists and registered dental assistants, with some funding set aside for an in-house certification of a dental assistant.

In addition, both RRHC and UIHS have efforts currently underway to expand access to dental care though clinic expansions.

TELEDENTISTRY AND VIRTUAL DENTAL HOMES

According to the American Dental Association (ADA), "Teledentistry refers to the use of telehealth systems and methodologies in dentistry. Telehealth refers to a broad variety of technologies and tactics to deliver virtual medical, health, and education services. Telehealth is not a specific service, but a collection of means to enhance care and education delivery."

Modalities for patient care and education include:

a. Live video (synchronous): Live, two-way interaction between a person (patient, caregiver, or provider) and a provider using audiovisual telecommunications technology.
b. Store-and-forward (asynchronous): Transmission of recorded health information (for example, radiographs, photographs, video, digital impressions, and photomicrographs of patients) through a secure electronic communications system to a practitioner, who uses the information to evaluate a patient's condition or render a service outside of a real-time or live interaction.
c. Remote patient monitoring (RPM): Personal health and medical data collection from an individual in one location via electronic communication technologies, which is transmitted to a provider (sometimes via a data processing service) in a different location for use in care and related support of care.
d. Mobile health (mHealth): Health care and public health practice and education supported by mobile communication devices such as cell phones, tablet computers, and personal digital assistants (PDA).

A virtual dental home (VDH) is a form of teledentistry as it uses telehealth systems and dental methodologies to provide care for patients. A VDH refers to a community-based oral health delivery system where patients receive education, preventative, and restorative dental services in the setting where they live or receive education, social, or other general health services. The VDHs are staffed by registered dental hygienists in alternative practice (RDHAP), registered dental hygienists (RDH), and registered dental assistants in extended functions (RDAEF). These three types of dental professionals are based in the community settings such as schools, Head Start preschools, and nursing homes. They meet with patients, collect dental records (x-rays, photos, dental history, etc.), then upload them to a secure website for a dentist at a remote dental clinic or practice to review. The dentist then helps create a treatment plan for the RDHAP, RDA, or RDAEF to complete with the patient. If in-person care is required, the virtual dental home will refer the patient to a local dentist for the remaining treatment.

For further clarification on the Teledentistry and Virtual Dental Home model, see Appendix A of this report.

Existing Efforts in Teledentistry and Virtual Dental Home Models

Teledentistry is a strategy that is currently being examined by some of the clinics in the county. Interviews with the clinics highlighted that access to the internet and a phone can be a barrier to setting up a teledentistry model, as many people do not have access to them.

In May of 2022, CareQuest Institute for Oral Health conducted an electronic survey to assess the impact of the COVID-19 pandemic on dental providers.[18] The survey's response rate was 13% with 2,767 dental providers contributing feedback. Considering that the COVID-19 pandemic was a significant driver in a widespread application of teledentistry, close to one-quarter of the surveyed dentists (23%) are currently using teledentistry. Not all dental providers share the same sentiments regarding teledentistry. Early adopters of the practice indicated how valuable teledentistry is while late adopters were more apprehensive considering aspects such as quality of care and ethics around payment. Other notable findings were that eleven percent (11%) of dentists planned on using teledentistry in the future, and that 93% of dental providers anticipate that practicing teledentistry will lead to a long-term change in how they practice dental care.

MEDICAL DENTAL INTEGRATION

Oral health is commonly regarded now as being inextricably linked to an individual's overall health and well-being. For instance, the World Health Organization (WHO), during 2021, adopted a resolution calling for the creation of a global oral health strategy, which included a recommendation that dental care be mandated within a universal health coverage agenda. If oral health and general health are dependent on each other as such, then services for each should be equivalently linked.

The integration of oral health care into primary health care systems are key strategies for improving access to oral health services in vulnerable and underserved communities. One model of integration includes expanding oral health practices through the existing medical workforce, including pediatricians, nurse practitioners, and physician assistants. This expansion of oral health practices in the medical setting occurs through the training of medical professionals to do dental screenings and or assessments. A second model of integration is where medical providers will embed dental hygienists or dental assistants to deliver screenings and services in their offices. Medical dental integration strategies are still in their infancy as certain barriers exist for optimal success, however the efficacy of the strategy has been demonstrated.

For further clarification on the Medical Dental Integration strategy, see Appendix B of this report.

[18] https://bmcoralhealth.biomedcentral.com/articles/10.1186/s12903-022-02208-z, accessed June 6, 2022.

Existing Medical Dental Integration Efforts

In 2017 the California Department of Health Care Services (DHCS) awarded Humboldt County Department of Health and Human Services - Public Health Branch one of fifteen Local Dental Pilot Projects (LDPP) through DHCS's Dental Transformation Initiative (DTI) grant. One of the core components of this pilot project focused on medical dental integration for children. Public Health partnered with Open Door Community Health Centers, one of the aforementioned FQHCs, to champion these efforts between May of 2017 and December of 2020. Open Door placed a Registered Dental Assistant (RDA) on-site at two of the clinics run by the organization; Eureka Community Health Center and Humboldt Open Door Center.

In the medical settings, the RDA offered preventive oral health services to children either arriving for a sick visit or for a Well-Child Medical Visit (WCMV). The services offered consisted of fluoride varnish, oral health screenings, oral health education, and referrals to a dental clinic.[19] This work resulted in 2,976 children reached in a medical setting, with 1,952 of those children on Medi-Cal Dental, in Humboldt County.

CARE COORDINATION

Care coordination is emerging as a community model for reducing incidences of dental disease. There are many ways to think about care coordination, as identified by the San Francisco Evidence-Based Practice Center. The center found that between many distinct definitions, five basic tenets remained constant. Care coordination is defined as the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate appropriate delivery of healthcare services. Organizing care involves the marshaling of personnel and other resources needed to carry out all required patient care activities and is often managed by the exchange of information among participants responsible for different aspects of care.

Care coordination doesn't align as a primary strategy for increasing access to care for adults on Medi-Cal in Humboldt County. Care coordination and patient navigation programs depend on access and availability of local oral health services.

For further clarification on the Care Coordination strategy, see Appendix C of this report.

Existing Efforts for Care Coordination

Humboldt County participated in care coordination efforts through the Local Dental Pilot Project (LDPP), occurring from 2017 to 2020. Intensive prevention-focused care coordination for high risk children, in conjunction with medical dental integration, was the core component of the

[19] Local Dental Pilot Program - Humboldt County Summary Findings, 2020.

LDPP. To assess which children were at high risk, a standardized caries risk assessment was conducted yearly.

Medi-Cal Dental families with children 12 years and younger and who were assessed as high risk were eligible to enroll in the care coordination hub. The families enrolled got linked with a dental coach who would assist with setting up dental appointments and navigating the process of filling out paperwork. Families would get access to dental supplies and nutrition assistance, which helped in reinforcing their dental health routine. The dental coaches would also educate the families on oral hygiene instruction as well as provide individualized support to the family in making preventive and restorative oral health care routine. In many cases, individualized support came in the form of transportation, which was a barrier for families in prioritizing oral health, especially when it involved traveling far distances such as Santa Rosa. By the end of the LDPP, the care coordination hub had enrolled 463 children. The caries risk assessment further highlighted the community's need for assistance in seeking care as 84% of those children were identified as high-risk.[20]

PREVENTIVE CARE IN COMMUNITY BASED SETTINGS

Dental care in the United States generally operates as a reactionary model, where the patient takes initiative to receive care from a treatment facility. The care a patient gets is heavily dependent on their personal resources and knowledge, and can compound significantly with financial, structural, and cultural barriers to inhibit care. Furthermore, access and quality are magnified in rural communities through provider shortages, transportation issues, and a lack of funding for services.

Community-based models have had high efficacy in rural communities as they can break down the aforementioned barriers to accessing care. As simple as it sounds, providing preventative care in community based settings is especially important for rural communities as it can reduce the distance in which community members need to travel to access care and education. Some community members who need care are completely physically isolated, such as elderly populations.

Existing Efforts for Community Based Preventive Care

Redwood Community Action Agency (RCAA) champions the Teaching Oral Optimism throughout Humboldt County (TOOTH) program. The TOOTH program provides education and preventive services for K-6th grade populations via Oral Health Educators. The California Conservation Corp originally managed the program, before it was transferred to RCAA in 2009. The TOOTH program provides oral health lessons to family daycares/facilities, preschools,

[20] Local Dental Pilot Program - Humboldt County Summary Findings, 2020.

kindergarten through 5th grade classrooms, and community settings. Topics covered by Oral Health Educators include proper oral health care techniques, nutrition, importance of dental visits, exercise, sleep, and germ prevention.

Humboldt County Department of Health & Human Services- Public Health Branch delivered preventive oral health services in school-based settings as part of their Proposition 56 grant. Dental hygienists visited target schools and provided oral health assessments, fluoride varnish, and cleanings to students at the school site.

Both Open Door Community Health Centers and Humboldt County Department of Health & Human Services- Women, Infants & Children (WIC) program have provided well-child dental visits in settings outside the dental office.

A number of community partners have provided oral health education and in some cases oral health assessments and fluoride varnish by a dentist at health fairs, kindergarten registration days, and other community events.

PRIORITIZED STRATEGIES

While it is difficult to pinpoint 1) the exact number of dentists working in clinics that accept Medi-Cal Dental due to turnover and shifts in workforce and 2) the exact number of individuals on Medi-Cal Dental who are not currently receiving care, information gathered from community stakeholders and surveys with adults on Medi-Cal Dental, it is clear that the demand for oral health services for the Medi-Cal Dental population exceeds the capacity of the current system. There are larger forces at play as well, since the majority of private practice dentists across the state of California do not accept Medi-Cal Dental insurance for a variety of well-documented reasons. This is true in Humboldt County as well.

The clinics in Humboldt County that do accept Medi-Cal Dental are constantly trying to keep up with demand and most are closed to new patients on a regular basis.

Using a framework adapted from the *Humboldt County Oral Health Strategic Plan*, an estimate of dental health professionals for the population on Medi-Cal can be made. It's estimated that there are less than 25 full time dentists who work in the clinics.[21] Utilizing the average U.S. dentist to patient ratio - 1631 to 1 - it can be estimated that roughly 34 full time dentists are needed to adequately serve Humboldt County's population on Medi-Cal.[22] Humboldt County needs at least 10 or more dentists who accept patients on Medi-Cal to fill this need.

[21] Oral Health Needs Assessment, 2018.
[22] American Dental Association, 2021.

Employing the same methods as above, it can be estimated that roughly 50 full time dentists are needed to adequately serve the rest of Humboldt County's population. Currently there are 45 private practice dentists that are serving Humboldt County, which is close to meeting the need. However, as previously mentioned, approximately 40% of private practice dentists in Humboldt County are either considering or are unsure about retirement in the next five years.

Figure 3. Estimated Number of Dentists Needed to Serve Humboldt County Residents

	Population Estimate	**Number of FTE Dentists to fit need**
Population on Medi-Cal Dental	55,202	34
Population with Private Insurance and/or private pay	81,261	50
Total	*136,463*	*84*

When asked what types of resources their organization needs to increase capacity for adult patients, the FQHCs in the county had various answers.[23] One of the clinics outlined housing as a serious need, as the limited amount of housing opportunities discourages significant workforce additions. As previously noted, some of the FQHCs offer housing services, either temporarily or permanently, which helps break down the barrier. However, to truly mend housing problems, more permanent solutions need to be implemented. Community collaboration around housing was noted as a possibility, but the clinics are unsure about how to implement such a strategy. Other clinics answered that expanding mobile dental to reach beyond just children, workforce development, and innovative partnerships are needed strategies to increase capacity for adults.

CCRP utilized the following process to identify and prioritize strategies for future action to increase access to oral health care for the Medi-Cal Dental population in Humboldt County. The initial set of key strategies were identified based on work and conversations with the Humboldt County Dental Advisory Group and the Humboldt County Oral Health Leadership Team between 2014 and 2022. In 2022, both groups prioritized their top three strategies. This process is discussed in detail in the methods section of the report.

Key Strategies Identified:

- Expand clinics, providers, and mobile services.
- Workforce development focused on oral health.
- Teledentistry and virtual dental homes.

[23] CMSP Interviews with the clinics, 2021.

- Medical-dental integration.
- Oral health-focused care coordination.
- Preventive oral health care in community-based settings.

Top Three Prioritized Strategies:

- Expand clinics, providers, and mobile services.
- Workforce development focused on oral health.
- Medical-dental integration.

During the spring of 2022, the City of Eureka, the California Center for Rural Policy, and the Humboldt County Department of Health & Human Services hosted three oral health catalyst meetings. (60, 32, 25 participants, respectively). The results of these meetings, combined with the prioritization done by the Oral Health Leadership Team and the Dental Advisory Group, was the prioritization of the following focus areas: 1) Funding, 2) Infrastructure, and 3) Workforce. As of June 2022, the oral health catalyst meetings will merge with the Humboldt County Oral Health Leadership Team to create the Humboldt County Oral Health Steering Committee.

The work will be carried forward through an Oral Health Steering Committee as well as three Oral Health Subcommittees. The Steering Committee's main purpose is to provide strategic guidance to the subcommittees, alongside continuing to provide an environment for collaboration on broad oral health issues. Collaboration is a main goal for the steering committee, as topics and agendas will be formed through preemptive meetings with the leaders of the committee. The Oral Health Subcommittees will report out quarterly to the steering committee, with one subcommittee covering each of the following topics:

- Succession planning for retiring dentists
- Expansion of oral health care workforce and career pathways
- Building an oral health informational toolkit

FUNDING OPPORTUNITIES

The clinics in Humboldt County work continuously to increase their capacity to provide oral health services to the Medi-Cal Dental population. Most do so through planning and implementing clinic expansion efforts, which are resource-intensive and time-consuming. CCRP supports the clinics in these efforts and would like to see additional state and federal resources made available to rural counties to expand access to oral health care.

Incentive programs for prospective dentists, registered dental hygienists, and registered dental assistants should be readily accessible and available for individuals' considering careers in oral

health. Additional incentives for those who 1) serve individuals on Medi-Cal Dental, and 2) work in remote rural communities should be prioritized.

RECOMMENDATIONS

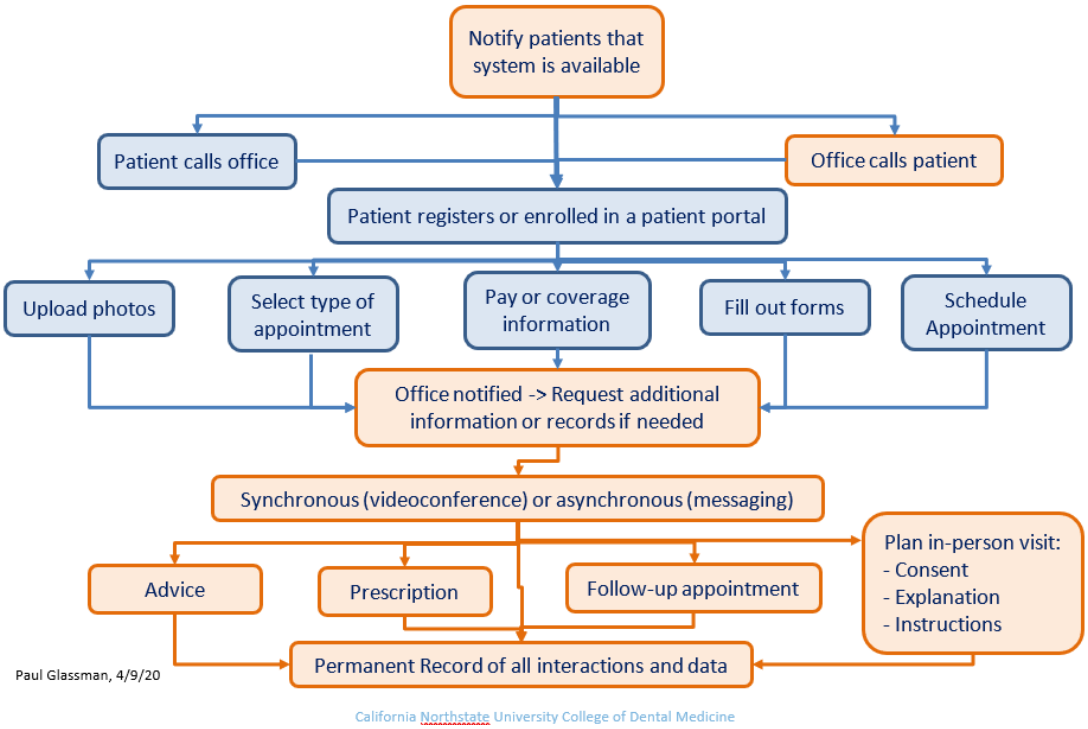
- Work with local education and other community partners to explore the feasibility of offering a dental hygienist program in Humboldt County.
- Support continued conversations and collaboration between partners through the Humboldt County Dental Advisory Group.
- Support the transition of the Oral Health Leadership Team (OHLT) into the Oral Health Steering Committee and Subcommittees.
- Work with small business development organizations to support retiring private practice dentists in Humboldt County to successfully sell and transition their practices to the next generation of dentists.
- Build robust Care Coordination / Patient Navigation programs to connect families with oral health care in and out of Humboldt County.
- Increase the number of active registered dental hygienists in alternative practice in Humboldt County.
- Build upon medical-dental integration efforts across the county.
- Gather information from local oral health professionals about their interest in and/or reservations about teledentistry and virtual dental home strategies.
- Utilize the Smile Humboldt website to house oral health resources tailored to a variety of audiences to support community conversations about the need for more oral health services and to share information broadly about daily practices that promote good oral health.
- Continue efforts to provide school-based oral health education to promote daily practices to take care of teeth in between visits to the dentist.
- Support efforts by the Humboldt County Office of Education to create awareness about oral health career opportunities for the K-12 population.
- Support efforts to expand clinics and mobile dental vans and recruit oral health professionals to Humboldt County.

Appendix A. Teledentistry and Virtual Dental Home Literature Review

Outcomes of teledentistry services vary between clinics and practices but some of the most common **beneficial outcomes of teledentistry** include significantly shorter wait times to obtain specialty consultations, higher treatment completion rates, higher appointment compliance rates, and improved work-flow efficiencies for patients, providers, and support staff. In addition, teledentistry has potential to better serve low access populations such as those in assisted or group living facilities, patients with special needs, and rural populations (Kopycka-Kedzierawski et. al, 2018). Common **challenges in teledentistry** include dissimilarities in state and federal laws, limited reimbursement rates, logistical issues (often limited access to technology), concerns about quality and security, and limited number of providers who offer telehealth services (Park et al., 2018).

How does teledentistry fit into the normal workflow of a dental practice or clinic?

The following graphic from Dr. Paul Glassman with the California Northstate University College of Dental Medicine provides one example of how the flow of teledentistry could work in a dental clinic or practice. The blue represents the actions by the patient and the orange represents actions by the provider or office. While this exact model was created for a COVID related discussion, it is adapted from the regular virtual dental home model (discussed below) and could still fit into a clinic's workflow post-COVID era. Dental clinics and practices from all over the U.S. have started to adopt this model or models very similar.



How can teledentistry improve access to care in rural communities?

Teledentistry has proven to be effective in improving access to care in underserved and rural communities however, it remains underutilized in many states and regions. Findings from a teledentistry pilot project with the University of Rochester's Eastman Institute for Oral Health (EIOH) revealed that teledentistry was highly successful in providing oral health care to children in disadvantaged rural communities. In 2010, the EIOH partnered with an FQHC in a rural region of New York to offer synchronous (video conferencing) teledentistry. When the program first started, they found that only 15% of patients referred for pediatric dental care at the FQHC had actually completed their treatment plans. After four years of the program 251 patients had been enrolled in teledentistry and 93% had completed treatment plans. In order to continue those high rates of completion, a monthly meeting is held between the remote pediatric dentist and the FQHC teledentistry coordinator to review each enrolled child and discuss treatment plans. When in-person care is needed, the FQHC teledentistry coordinator works with their local providers to schedule an appointment with treatment plans based on the recommendations from the remote dental team's findings. As of 2018, 850 rural pediatric patients have been seen remotely through the EIOH program and 95% of those who had oral health needs met that the local dental clinic had been unable to accommodate (Kopyychka-Kedzierawski, 2018).

Though synchronous teledensity has proven to be effective, it is still underutilized by many rural regions. According to data collected from the Association of American Medical Colleges from 2015-2016, only 7.1% of surveyed patients in rural areas said they had used live video communication before. However, 53.7% said they would be willing to discuss health issues that way if it were an option. One explanation for why live video communication remains so low for an underserved population is lack of availability from the provider. In rural areas, a majority of patients are served by FQHCs, of which only 38% offer telehealth services. While CMS has recently released more guidelines around the use of telehealth services, many community health centers are often hesitant to invest in the infrastructure due two common reasons; 1) Confusion or varying state policies on reimbursements for teledentistry services 2) Low patient volume (especially in rural areas) to support the investment in the new services (Park et al, 2018).

Appendix B. Medical Dental Integration Literature Review

Medical dental integration is gaining attention as a strategy to increase access to care for underserved populations. According to a DentaQuest survey conducted in 2020 with 254 providers, 85% of them “strongly agreed” or “somewhat agreed” that medical dental integration is an effective method of improving overall health. A recent report by DentaQuest also outlined that an average of 88% of patients, dentists, physicians, employers, and Medicaid dental administrators surveyed believe that greater collaboration across medical and dental providers would improve patient care.

What are beneficial outcomes of Medical Dental Integration?

Marginalized and underserved populations, especially in rural communities, tend to get lost by the nation’s fragmented healthcare system. Successful medical dental integration aims to break down structural barriers in accessing care between healthcare silos, catching patients falling through systemic cracks (Pawloski et al., 2021). Implementation of the strategy has highlighted certain benefits such as providing dental care services in the medical setting; services that tend to be preventive in nature. This can include providing oral health education, oral health screenings, dental supplies, application of fluoride varnish, and referrals to dentists if further care is needed. Integrating a dental professional in a primary care team not only allows capacity for the aforementioned services but simultaneously allows training for the medical providers in identifying oral health concerns (Schroeder, 2020). Medical dental integration has also been highlighted as positively affecting the health care system experience for both patients in accessing care and providers in delivering care. Eliminating multiple visits, reducing the time length per visit, and integrating electronic health records to avoid moving between health record systems positively impacted patients and providers' experience.

What are barriers of Medical Dental Integration?

Integration of oral health into primary care clearly comprises certain benefits, however there are inherent barriers that constrict the strategy. A large barrier being that insurance policies have separate medical and dental realms, which are detrimental to coordinating services between medical and dental providers. Furthermore, integrated systems encounter high costs which can impact the economic stability of programs that target integrated care. Recruitment and retention of staff, whether medical or dental, is considered a barrier as well, especially when in a rural context with workforce shortages.

A lack of interprofessional education and a primary focus on discipline-oriented training in healthcare can also act as a barrier to truly integrating care. Moreover, a lack of interprofessionalism relates to a lack of continuity in care and services, as silo practices and

contract-based services have been reported as barriers to coordination and integration of services (Harnagea et al., 2017). One pilot project indicated that even when dental and medical services were collocated, care siloing still occurred, thus it is important to demonstrate the differences in collocation of services and integration of services (Pawloski et al., 2021).

Lastly, staff buy-in and communication have been identified as moderating variables in implementation success. Previous research noted that lack of staff buy-in was a barrier to program adoption, emphasizing that a lack of communication was a key issue.

Implications for Medical Dental Integration in Rural Contexts

Models that apply medical dental integration strategies in the context of low-income and rural communities are uncommon, however contemporary research is beginning to shine a light on how the strategy can impact access to care for these communities. In a study of six FQHCs integrating oral health into well-child visits, researchers found that a clinic with low resources was among the most integrated in their study sample. It was noted that the clinic's lack of resources was balanced by a strong commitment to cross-disciplinary collaboration on the part of its leadership and supervision of integrative programs (Bernstein et al., 2016).

During 2019, a community health center in Eastern Washington State, serving a rural, low-income, mostly Hispanic community, implemented a medical dental integration program for children to receive preventive oral health care services during pediatric medical clinics and WIC (women, infants, and children) program appointments (Pawloski et al., 2021). The dental providers that provided care in the primary care setting were full-time dental hygienists who received training as community dental health coordinators. As suggested above, the project was deemed successful at increasing access and improving the experience of dental care in two rural communities that are considered Health Professional Shortage Areas (HPSAs).

Appendix C. Care Coordination Literature Review

The goal of care coordination is to ensure that a patient's health needs are being met and that the right person delivers the right care at the right time. Typically, this occurs through health professionals working directly with patient's attempting to access care. At this point in time, there is more and more dialogue emerging that emphasizes the importance of dental health on the quality of overall health, however there are still structural barriers to oral health education, adversely impacting the importance placed on preventive oral health. Care coordination as a strategy can be used to help break down preconceived notions about oral health as well as facilitating access to care.

FIGURE 1.
Community Dental Health Coordinators Overview

Care coordination as a strategy has demonstrated efficacy, as the American Dental Association (ADA) designed a curriculum for Community Dental Health Coordinators (CHDC). This curriculum is designed to be incorporated with the training programs of dental hygienists or dental assistants. Skills that community health workers learn are integrated into a dental context, such as case management and care coordination. Community Dental Health Coordinators have a more active role than just coordination of care, as they are allowed to apply dental sealants and fluoride varnish. However, the basic tenets of care coordination incorporated in the role have still been exhibited as effective (Grover, 2017).

What are beneficial outcomes of Care Coordination?

Previously noted within the report, Social Determinants of Health impact the way that distinct communities experience health differently. Health literacy and education level are such determinants as they impact health care decision making at the individual and group level. These

factors influence familiarity of making dental appointments as well as the terminology needed to convey health topics to a provider. Herein lies the value of care coordination for assisting underserved and vulnerable populations, as coordinators can be moderators between communities and care.

Beneficial outcomes of care coordination are as follows: care coordinators improve the rate of scheduling and attendance of appointments for high risk dental caries patients, facilitate effective communication between patients and dental professionals, promote effective preventive care routines, assist in bridging healthcare silos, improve health outcomes for patients, and decrease costs associated with care. Lastly, care coordinators are able to provide robust education relating to the full scope of dental services available, outlining opportunities for care that patients might not know exist.

What are barriers and challenges to Care Coordination?

One of the most overarching barriers to the strategy of care coordination is a shortage of providers that accept public insurance such as Medi-Cal Dental. Coordinators cannot link patients with providers and align appointments if openings for services locally are unavailable.

According to Sean Boynes, Vice President of Health Improvement at CareQuest Institute, a large cultural challenge faces care coordination. He notes the strategy as daunting because of how it requires a bridging of silos. The real cultural change comes through exposing portions of dental care delivery systems and being honest about the weaknesses that impact access to care through those systems.

A common moderating factor when examining the effectiveness of care coordination are accessible, up-to-date electronic health records (EHR). In one study, these electronic records were accessible to care coordinators, highlighting previous patient care and allowing for a streamlined process of aligning future care. It was determined that enhancements in the EHR system correlated positively with increased interactions with a care coordinator. Unfortunately, system enhancements through broadband internet can be a significant barrier for rural communities as these communities lack the infrastructure (Simmons et al., 2021).

Implications for Care Coordination in Rural Contexts

Care coordination is a strategy specifically designed to align patients who face challenges in accessing services with the care they need. Accordingly, care coordination work is most needed for underserved populations, more specifically rural communities. Rural communities face placement in remote areas, some of which have no ability to transport themselves to

appointments. Care coordinators can help facilitate transportation options, helping alleviate a barrier that disproportionately impacts rural communities.

According to a study conducted by Simmons et al. (2021), patients with Dental Care Advocate (DCA), a care coordination role, interaction are more than twice as likely to schedule and attend a dental appointment than those in non-interaction DCA group. It was noted that patients who lived in rural areas were significantly less likely to schedule an appointment than their urban counterparts. This speaks to the supplemental barriers that rural communities face in receiving care, however it is important to note that the strategy has potential in bolstering accessibility regardless of geographical location.