

## Implications of COVID-19 on Safety-net Oral Health Services



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**April 2023**



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## PREFACE

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The Oral Health Workforce Research Center (OHWRC) at the Center for Health Workforce Studies (CHWS) at the University at Albany's School of Public Health completed a study to describe the impact of the COVID-19 pandemic on the delivery of oral health services in the dental safety-net.

This report was prepared for OHWRC by Margaret Langelier, Simona Surdu, Theekshana Fernando, Sai Sindhura Gundavarapu, and Alex Romero. OHWRC is supported by the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) as part of an award totaling \$450,000 with 0% financed with non-governmental sources. The content of this document is reported by the authors and does not necessarily represent the official views of nor an endorsement by HRSA, HHS, or the US government. For more information, please visit [HRSA.gov](https://www.hrsa.gov).

The mission of OHWRC is to provide accurate and policy-relevant research on the impact of the oral health workforce on oral health outcomes. The research conducted by OHWRC informs strategies designed to increase access to oral health services for vulnerable populations. OHWRC is based at CHWS at the School of Public Health, University at Albany, State University of New York (SUNY), and is the only HRSA-sponsored research center with a unique focus on the oral health workforce. The views expressed in this report are those of OHWRC and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY.

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We especially appreciate the guidance of staff at the Office of Quality Improvement, Bureau of Health Workforce at HRSA and their help with obtaining the data for the quantitative analysis of the Uniform Data System that is described in this report.

### Institutional Review Board

The plan for this study was reviewed and approved by the University at Albany Institutional Review Board (Study No. 22X153).

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# EXECUTIVE SUMMARY

## BACKGROUND

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The COVID-19 pandemic significantly affected the oral health care delivery system in the US, particularly its workforce. Dentists and staff were assumed to be at high risk for contracting the virus because of working in the oral cavity causing immediate exposure to saliva and procedure generated aerosols, which carry the virus.<sup>1</sup>

The temporary postponement of health services beginning in March 2020 had lasting impacts on all medical and dental providers, but especially on those in the safety-net. Safety-net organizations, which were established to meet the health care needs of people who, for reasons of income, insurance status, geography, disability, race, language, or ethnicity, are unable to access needed health services, were profoundly impacted.

Federally Qualified Health Centers (FQHCs) are the most prominent provider organizations within the US health care safety-net, although many non-profit organizations and private practitioners contribute to care for patients with limited access to health and oral health services. In 2021, more than 30 million patients received services in FQHCs in the US; approximately 5 million of those patients received oral health care services.<sup>2</sup>

Researchers conducted a mixed-methods study that included a quantitative analysis of health center level data from the Uniform Data System (UDS) compiled by the Health Resources and Services Administration<sup>3</sup> and qualitative research that included interviews of dental clinicians and administrators in 11 safety-net dental organizations across the US.

The objective of this research was to describe the challenges posed by the pandemic on the ability of safety-net providers to deliver oral health care to underserved communities and to identify strategies that enabled care delivery during recent years but especially during the initial challenging months of 2020.



# QUANTITATIVE STUDY

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## Methods

The quantitative study used data from the 2019 and 2020 UDS to examine the impact of the COVID-19 pandemic on 1,350 FQHCs with over 12,000 delivery sites that served children and adults during the study period. The proportions of FQHCs delivering oral health services in 2019 and 2020 were calculated as the percentage of FQHCs with any full-time equivalent (FTE) dentist and/or dental hygienist providing oral health services to at least 1 patient. All data analyses were conducted using Stata 15SE.

## Key Findings

### Provision of oral health services at FQHCs, 2019-2020 UDS

- Nationwide, the total number of FQHCs decreased from 1,352 in 2019 to 1,342 in 2020.
- The proportion of FQHCs providing dental care was similar pre-pandemic (87.6%) and during the first year of the COVID-19 pandemic (87.8%).
- Nationwide, the total number of patients who accessed care at FQHCs decreased from 26.8 million in 2019 to 25.9 million in 2020.
- The proportion of FQHC patients who received any oral health services decreased by almost 20%. The largest decline occurred in the Northeast (-21.94% change), while the decrease in the proportion of FQHC patients receiving dental care was the smallest in the West (-14.25% change).
- The proportion of FQHC patients receiving any specific oral health services, except for emergency services, decreased from 2019 to 2020. The largest declines were observed for patients receiving oral prophylaxis treatments (-33.1% change), while the proportion of patients receiving emergency services increased by 13.0%.
- In 2019, a little over one-third of FQHCs nationwide (35.3%) provided oral health services via teledentistry. By 2020, 96.4% of FQHCs nationwide provided oral health services via teledentistry, representing a 2.7-fold increase from 2019.
- Nationwide, the average total number of oral health providers at FQHCs decreased from 17.7 FTEs in 2019 to 15.8 FTEs in 2020 (-11.0% change). The decrease in oral health providers at FQHCs was highest in the Northeast (-15.3% change) and the West (-11.8% change). The decline was most evident among FTE dental hygienists (-12.5% change nationwide), particularly in the Northeast (-21.8% change).

## Study Limitations

The *quantitative* component of the study had several limitations. First, secondary data face many challenges and inconsistencies resulting from differences in collecting and reporting the data as well as missing, incorrect, or unavailable information across health centers. Second, UDS data is reported at the organization level; therefore, the current study is not able to account for site level or provider level factors (eg, leadership, dental team characteristics, and practice patterns) or environmental/state-level factors that may affect the provision of oral health services by FQHCs.

## Discussion and Conclusions

The current study's findings using UDS data indicated that nationwide there was a large decrease in the proportion of patients accessing any dental care at FQHCs, particularly prophylaxis services during the first year of the COVID-19 pandemic compared to 2019. In contrast, the utilization of emergency services for oral health problems increased in 2020 compared to the pre-pandemic year. From 2019 to 2020, there was also a concerning reduction in oral health staffing nationwide at FQHCs, especially among dental hygienists. These results are dramatically different from the findings published in our previous report that showed increasing trends in direct provision of oral health services and staffing at FQHCs in 2011-2014.<sup>4</sup>

The current study also found differences by geographic area. The largest declines in FQHCs' patients receiving any oral health services and numbers of oral health providers occurred in the Northeast. These results were not surprising since the Northeast region experienced comparatively higher rates of COVID-19 infection and mortality in the first months of the pandemic than some other areas of the country.<sup>5</sup> In contrast, the Northeast region saw the largest increase in the use of teledentistry. It would be valuable to estimate the 10-year temporal trends at FQHCs in order to better understand potential future changes in the provision of oral health services in the safety-net.

# QUALITATIVE STUDY

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## Methods

Between May and September 2022, project staff conducted interviews with 26 people in various positions at 11 safety-net dental organizations, 9 of which were FQHCs. Two organizations were not-for-profit community dental providers. The interview questionnaire was designed to solicit information and opinions about the impact of the COVID-19 pandemic on oral health service delivery and patients' access to dental services in those settings. The dental centers were selected to include provider organizations in each region of the country:

- Northeast
  - Community Health Center of the North Country, New York
  - Whitney Young Health, New York
- West
  - Petaluma Health Center, California
  - Ravenswood Family Health Network, California
  - Alameda Health Systems, California
  - Salud Family Health, Colorado
  - Terry Reilly Health Services, Idaho
  - Future Smiles, Nevada
- Midwest
  - Apple Tree Dental, Minnesota
- South
  - Mary's Center, District of Columbia and Maryland
  - Charlotte Community Health Clinic, North Carolina

All interviews were conducted using the Zoom platform. Following each interview, the multiple notes of interviewers were consolidated to a single transcript detailing informants' insights. When the interview process was complete, all transcripts were uploaded to Dedoose V.9.0 for coding and analysis.<sup>6</sup>

## Key Findings

### Key Informant Interviews, 2022

Participants in the interviews spoke both broadly and specifically about the impact of the pandemic on operations, workforce, patients, and programs. Researchers identified 9 common themes developed throughout the interview process. Those themes are:

- **Theme 1.** Although the experience of COVID-19 was universal, safety-net providers' experiences differed by location, especially in the early months of the pandemic.
- **Theme 2.** Even though infection control in dentistry is standard procedure, the COVID-19 pandemic required extraordinary precautions, structural alterations to the environment and strict attention to personal protective equipment and dental tools to reduce the possibility of disease transmission.
- **Theme 3.** The challenges of the pandemic were not only clinical but also operational; the service disruption impacted staff in numerous ways.
- **Theme 4.** When possible, workforce was redeployed to other tasks to avoid furloughs and layoffs.
- **Theme 5.** It became necessary to find alternative ways of interfacing with patients.
- **Theme 6.** Re-opening to routine services was a gradual process in most places. Dental centers realized the importance of cautious resumption of practice.
- **Theme 7.** COVID-19 impacted patient decision making and ultimately dental health.
- **Theme 8.** Staff were impacted in multiple ways from pandemic related stressors.
- **Theme 9.** Special grant programs and funding for the safety-net were essential to safety-net provider organizations during the pandemic.

## Study Limitations

The *qualitative* component of the study had several limitations. Foremost was the small sample comprised of staff at 11 safety-net organizations in a few states. Therefore, the study findings may not apply to all safety-net organizations. Furthermore, the coding of interview transcripts was conducted by one researcher, limiting the ability to test for inter-coder reliability.

## Discussion and Conclusions

The COVID-19 pandemic impacted provision of dental services in the safety-net organizations that participated in this study. The disruption of care was immediate and precipitous at the onset of the pandemic yet the return to "normal" operations is much slower, more methodical, and constantly challenging. Although

it is almost 3 years since COVID-19 began to affect health care, the true extent of impacts on patients and providers are still unclear. The interviews for this project revealed that many organizations were proven to be both resilient and adaptable. One informant remarked that COVID-19 was a catalyst to move strategic planning in organizations in a new direction so that safety-net providers can continue to meet the needs of their patient communities over the long term.

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# TECHNICAL REPORT

## BACKGROUND

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The SARS-CoV-2 (COVID-19) pandemic was a pivotal event that disrupted the status quo and accelerated societal changes worldwide. Health care delivery systems were of paramount importance to effective management of crisis scenarios across the US. Provider organizations were challenged with maintaining medical, oral, and mental and behavioral health services for patients during a period when resources were limited and infection and mortality rates were rising steeply. At the same time, little was known about the vectors for transmission or the trajectory of the virus. Health care providers exhibited remarkable adaptability and resilience during the most challenging months of the COVID-19 pandemic but many continue to struggle with the impacts on their organizations and their workforces.

The COVID-19 pandemic significantly affected the oral health care delivery system in the US, particularly its workforce. Dentists and staff were assumed to be at high risk for contracting the virus because of working in the oral cavity causing immediate exposure to saliva and procedure generated aerosols, which carry the virus.<sup>1</sup> During the postponement of all except urgent dental services early in the COVID-19 pandemic, dentists and their staffs experienced unprecedented threats to their personal safety as well as to practice viability and job security.

The temporary postponement of health services beginning in March 2020 had lasting impacts on all medical and dental providers, but especially on those in the safety-net. Safety-net organizations, which were established to meet the health care needs of people who, for reasons of income, insurance status, geography, disability, race, language, or ethnicity, are unable to access needed health services, were profoundly impacted. Federally Qualified Health Centers (FQHCs) are the most prominent provider organizations within the US health care safety-net, although many nonprofit organizations and private practitioners contribute to care for patients with limited access to health and oral health services.

FQHCs are governed by Section 330 of the Public Health Service Act.<sup>2</sup> In 2021, more than 30 million patients received services in FQHCs in the US; approximately 5 million of those patients received oral health care services.<sup>3</sup> FQHCs are required to provide oral health services in fixed clinics, through mobile and portable oral health programs (ie, in schools, nursing homes, etc.), and/or by referrals.<sup>4</sup> According to our previous research findings, more than three-quarters of FQHCs provided oral health services directly to patients from 2011-2014.<sup>4</sup>

Regulations about health care practice during the early months of COVID-19 reduced resources to provide care for patients and disrupted care delivery. Similar to providers in the private sector, many public health providers, including FQHCs, were either closed or limited care provision to emergent and urgent services. FQHCs were particularly affected because of their positioning as safety-net providers within the delivery system. FQHCs' patient populations are typically low-income, from diverse communities, and often medically complex population groups which are at high risk not only for contraction of the COVID-19 virus but



also for complications from the disease. At a time when patient need was especially high, resources to meet those needs were constrained.

The National Association of Community Health Centers (NACHC) compiled data collected by the Bureau of Primary Health Care at the US Health Resources and Services Administration (HRSA) about the impact of the COVID-19 pandemic on FQHCs. The data were accrued through a periodic survey of health centers. The objective was to understand the impact of COVID-19-related restrictions on service provision. Based on those data, NACHC estimated that during the first week of May 2020, patient volume at FQHCs was 54% of volume prior to COVID-19. A year later, in April 2021, the rate had increased to 87% of pre-COVID-19 levels.<sup>5</sup>

The closures in early 2020 were followed by hopeful news. The Health Policy Institute at the American Dental Association, in its recurring survey of dentists, found that a majority of dental practices reopened by July 2020 with 90% at pre-COVID-19 staffing levels and 70% at pre-COVID-19 patient volume levels.<sup>6</sup> However, their survey of dentists in public health settings, such as FQHCs, found that these practices were not rebounding as quickly as those in the private sector.<sup>7</sup>

COVID-19 disproportionately affected the safety-net, creating greater dental staffing shortages, particularly for dental hygienists and assistants. A national sample survey of dental hygienists found high rates of COVID-19-related early retirement, greater likelihood of not working because of safety concerns and/or caring for children, or being laid off due to closures related to COVID-19.<sup>8</sup> The limited capacity in dental centers due to workforce shortages continues to affect the ability of the nonprofit sector to provide services to patients at a time when demand has not only rebounded but, in many places, exceeded pre-COVID-19 levels. In addition, COVID-19 increased the levels of stress among health workers, including the oral health workforce.<sup>9</sup>

The downstream impact on patients was increasingly evident as the months of the COVID-19 pandemic progressed. Lack of access to preventive care, unwillingness to get care due to the potential for exposure to the virus, loss of employer-sponsored dental insurance, and difficulties with finding a convenient or timely provider all contributed to advancing dental disease in the population. These issues were particularly concerning for patients in the safety-net with historical difficulties accessing care.<sup>10</sup> These circumstances also suggest increased reliance on emergency care, including at hospitals, which were and continue to be overburdened due to the COVID-19 pandemic, and which have few resources to address dental disease.<sup>10</sup>

This report describes the results of a mixed-methods study about the impacts of COVID-19 on dental practices in the safety-net, including FQHCs and other not-for-profit community dental providers. The objective of the research was to describe the challenges posed by COVID-19 on the ability of safety-net providers to deliver dental care to underserved communities and to identify strategies that enabled care delivery during recent years but especially during the initial challenging months of 2020.

This objective was achieved through a qualitative study that included 26 interviews of dental clinicians and administrators in 11 safety-net dental organizations across the US. These interviews focused on the impacts

and implications of the COVID-19 pandemic on dental service delivery, on the clinical dental workforce and oral health support staff, and on patients and their access to services.

In addition, the study included a quantitative aspect. Researchers analyzed health center-level data from the 2019 and 2020 Uniform Data System (UDS) compiled by HRSA.<sup>11</sup> The UDS is a standardized set of data reported annually by health center grantees. The data analyses in this report focused on differences in number and types of oral health services, the number of patients, and oral health staffing in the year prior to the COVID-19 outbreak (2019) compared to the year in which the COVID-19 pandemic most affected service delivery (2020).

This report is divided into 2 parts. The first offers results from the quantitative analysis of the UDS data relative to the variations in staffing, patients, and services between a pre-pandemic and a pandemic year. The second part discusses the qualitative study and the common themes that emerged from the 26 interviews. The narrative describes the unique challenges posed by the COVID-19 pandemic on the ability of safety-net providers to deliver dental care, capacity and sufficiency of the dental workforce, the recruitment and retention of staff, the impact on mobile and portable dental programs, and changes in the cost of providing care due to increased safety precautions against COVID-19.

# THE QUANTITATIVE STUDY: UNIFORM DATA SYSTEM (UDS) DATA, 2019 AND 2020

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## Methods

### Data Source

Researchers analyzed Health Center Grantee Data from the HRSA Uniform Data System (UDS). The Oral Health Workforce Research Center (OHWRRC) at the Center for Health Workforce Studies (CHWS) was granted access to health center-level dental workforce data within the comprehensive data set. The UDS is a standardized set of data reported annually by HRSA-designated health center program grantees based on a manual that includes reporting requirements.<sup>12</sup> Responding programs include health centers (referred to in this report as Federally Qualified Health Centers (FQHCs)), health center look-alikes, health care for the homeless programs, migrant health centers, and public housing primary care programs.<sup>12</sup> UDS data contain clinical, operational, and financial information at the health center level that can be compared by geography and over time.

This study used data from the 2019 and 2020 UDS to examine the impact of the COVID-19 pandemic on 1,350 FQHCs with more than 12,000 delivery sites that served children and adults who accessed services in the health care safety-net during the study period. The data from 2019, the year prior to COVID-19 pandemic onset, were used as a baseline to compare with 2020 data to identify changes in care delivery as a result of the impacts of COVID-19 on dental practices in the safety-net. The data presented compare:

- The proportion of health centers that provided oral health services
- The proportion of patients who received oral health services
- The proportion of health centers that provided care via teledentistry
- Staffing of oral health professionals

States were grouped in 4 geographic regions established by the US Census bureau as follows:<sup>13</sup>

- Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
- Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
- South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Texas, Virginia, West Virginia
- West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

## Data Analyses

The variations in the provision of oral health services at FQHCs, patients' utilization of oral health services, and staffing levels were estimated by computing the percent change between the year prior to the COVID-19 outbreak (2019) and the first year of the COVID-19 pandemic (2020). Several tables compare impacts nationwide and by region. All data analyses were conducted using Stata 15SE.

The proportions of FQHCs delivering oral health services in 2019 and 2020 were calculated as the percentage of FQHCs with any full-time equivalent (FTE) dentists and/or dental hygienists providing oral health services to at least 1 patient.

The proportion of patients accessing dental services at FQHCs by geography in 2019 and 2020 was calculated as the percentage of patients with any dental visit(s) and the percentage of patients with specific dental visit(s) among all patients at a FQHC. The specific oral health services analyzed included oral exams, preventive services such as prophylaxis and fluoride treatment, restorative services, oral surgery (extractions and other surgical procedures), rehabilitation services (endodontics, periodontics, prosthodontics, orthodontics), and emergency services. In addition, the average number of FQHC patients and patient visits with any dental visit(s) was computed.

The average number of oral health staffing FTEs at FQHCs that provided oral health services in 2019 and 2020 was calculated for all oral health professionals and separately for dentists, dental hygienists, and other providers (ie, dental assistants, aids, technologists). The level of support per dentist provider FTE at a FQHC was estimated by calculating the ratio of dental hygienist provider FTEs per dentist provider FTEs.

Estimates of oral health services, patients, patient visits, and provider FTEs that were below the 1st percentile or beyond the 99th percentile value of the data were considered outliers and were replaced with the 1st percentile or the 99th percentile value, respectively.

## Findings

### Provision of Oral Health Services at FQHCs, 2019-2020

**Table 1** shows the total number of FQHCs as well as the number and proportion of FQHCs that provided any oral health services in 2019 and 2020. Nationwide, the total number of FQHCs decreased from 1,352 in 2019 to 1,342 in 2020. The proportion of FQHCs providing dental care was similar pre-pandemic (87.6%) and during the first year of the COVID-19 pandemic (87.8%). The largest increase occurred in the South (1.6% change). In contrast, the proportion of FQHCs providing oral health services decreased in the West (-1.3% change).

**TABLE 1. Proportion of FQHCs Providing Oral Health Services by Region and Nationwide, 2019-2020**

Region	2019			2020			% Change 2019-2020
	All FQHCs	FQHCs providing oral health services		All FQHCs	FQHCs providing oral health services		
	n	n	%	n	n	%	
Midwest	271	243	89.7%	270	244	90.4%	0.8%
Northeast	231	210	90.9%	228	208	91.2%	0.4%
South	458	380	83.0%	458	386	84.3%	1.6%
West	392	351	89.5%	386	341	88.3%	-1.3%
Nationwide	1,352	1,184	87.6%	1,342	1,179	87.8%	0.3%

Source: Uniform Data System, 2019-2020. Bureau of Primary Health Care, Health Resources and Services Administration.

**Table 2** shows the total number of FQHC patients as well as the number and proportion of patients who received any oral health services at FQHCs in 2019 and 2020. Nationwide, the total number of patients who accessed care at FQHCs decreased from 26.8 million in 2019 to 25.9 million in 2020. The proportion of FQHC patients who received any oral health services decreased by almost 20%. The largest decline occurred in the Northeast (-21.9% change), while the decrease in the proportion of FQHC patients receiving dental care was the smallest in the West (-14.2% change).

**TABLE 2. Proportion of Patients Who Received Any Oral Health Services at FQHCs by Region and Nationwide, 2019-2020**

Region	2019			2020			% Change 2019-2020
	All FQHC patients	FQHCs patients receiving dental care		All FQHC patients	FQHCs patients receiving dental care		
	n	n	%	n	n	%	
Midwest	4,865,754	1,356,926	27.9%	4,777,487	1,065,829	22.3%	-20.0%
Northeast	5,191,727	1,308,885	25.2%	4,838,112	952,067	19.7%	-21.9%
South	7,960,165	1,463,284	18.4%	8,051,067	1,158,845	14.4%	-21.7%
West	8,748,974	2,132,308	24.4%	8,226,214	1,719,108	20.9%	-14.2%
Nationwide	26,766,620	6,261,403	23.4%	25,892,880	4,895,849	18.9%	-19.2%

Source: Uniform Data System, 2019-2020. Bureau of Primary Health Care, Health Resources and Services Administration.

**Table 3** presents the number and proportion of FQHC patients who received dental care by category of service in 2019 and 2020. Nationwide, among all FQHC patients in 2020, 11.4% received oral exams, 8.1% received prophylaxis services, 6.2% received fluoride treatments, 4.7% received restorative services, 3.2% received oral surgery services, 2.3% received rehabilitation services, and 5.2% received emergency services.

The proportion of FQHC patients receiving any specific oral health services, except for emergency services, decreased from 2019 to 2020 (**Table 3**). The largest declines were observed for patients receiving oral prophylaxis treatments (-33.1% change), followed by those receiving oral exams (-31.3% change), restorative services (-30.9% change), rehabilitation services (-30.3% change), and fluoride treatments (-28.7% change).

The proportion of patients receiving oral surgery services only decreased by 13.5%, while the proportion of patients receiving emergency services increased by 13.0% from 2019 to 2020.

The study findings at the region level (*results not presented*) showed that the largest decrease in the proportion of FQHCs' patients receiving any kind of service, except emergency services, occurred in the Northeast (-35.0% to -38.0% change for oral exams, prophylaxis, fluoride treatments, and restorative services; -20.3% change for oral surgery). In contrast, the proportion of FQHCs' patients receiving emergency services showed the greatest increase in the West (25.7% change).

**TABLE 3. Proportion of Patients Who Received Any Oral Health Services at FQHCs by Category of Service Nationwide, 2019-2020**

Category of Service	FQHCs patients receiving dental care				% Change 2019-2020
	2019		2020		
	n	%	n	%	
Oral exams	4,439,464	16.6%	2,942,838	11.4%	-31.3%
Prophylaxis	3,231,279	12.1%	2,104,333	8.1%	-33.1%
Fluoride treatment	2,329,412	8.7%	1,595,626	6.2%	-28.7%
Restorative services	182,2491	6.8%	1,208,213	4.7%	-30.9%
Oral surgery (extractions and other surgical procedures)	989,767	3.7%	822,168	3.2%	-13.5%
Rehabilitation services (endo, perio, prosthodontics, orthodontics)	882,601	3.3%	605,905	2.3%	-30.3%
Emergency services	1,228,432	4.6%	1,352,917	5.2%	13.0%

Source: Uniform Data System, 2019-2020. Bureau of Primary Health Care, Health Resources and Services Administration.

**Table 4** shows the average number of patients and patient visits, including those who received any oral health services at FQHCs nationwide, and by region in 2019 and 2020. Nationwide, the average number of FQHCs' patients who received any dental care decreased from 5,611 in 2019 to 4,387 in 2020 (-21.8% change). Similarly, there was a large decline in the average number of patient visits receiving dental care at FQHCs (-31.4% change). The results indicated that the Northeast saw the biggest decrease in the number of patients (-26.9% change) and patient visits (-37.4% change) on average per FQHC.

**TABLE 4. Average Number of Patients and Patient Visits Who Received Any Oral Health Services at FQHCs Nationwide and by Region, 2019-2020**

Region	Average # of patients receiving dental care at FQHCs		% Change 2019-2020	Average # of patient-visits receiving dental care at FQHCs		% Change 2019-2020
	2019	2020		2020	2020	
Midwest	5,824	4,555	-21.8%	14,740	9,415	-36.1%
Northeast	6,416	4,690	-26.9%	16,566	10,372	-37.4%
South	4,145	3,246	-21.7%	8,735	6,843	-21.7%
West	6,541	5,339	-18.4%	18,402	13,093	-28.9%
Nationwide	5,611	4,387	-21.8%	14,422	9,892	-31.4%

Source: Uniform Data System, 2019-2020. Bureau of Primary Health Care, Health Resources and Services Administration.

**Table 5** presents the number and proportion of FQHCs providing oral health services through telemedicine in 2019 and 2020. In 2019, a little over one-third of FQHCs nationwide (35.3%) provided oral health services via teledentistry. Teledentistry was most common in the West, where 40.5% of FQHCs providing oral health services offered teledentistry and least common in the Northeast (23.3%). By 2020, 96.4% of FQHCs nationwide provided oral health services via teledentistry, representing a 2.7-fold increase from 2019. The largest growth occurred in the Northeast (4.1-fold increase), followed by the Midwest (3.1-fold increase).

**TABLE 5. Proportion of FQHCs Providing Oral Health Services via Telemedicine and Average Number of Virtual Dental Visits at FQHCs by Region and Nationwide, 2019-2020**

Region	FQHCs providing teledentistry services			
	2019		2020	
	n	%	n	%
Midwest	79	32.5	241	98.8
Northeast	49	23.3	202	97.1
South	148	39.0	360	93.3
West	142	40.5	333	97.6
Nationwide	418	35.3	1,136	96.4

Source: Uniform Data System, 2019-2020. Bureau of Primary Health Care, Health Resources and Services Administration.

### Oral Health Staffing at FQHCs, 2019-2020

**Table 6** shows the average number of oral health staffing FTEs at FQHCs that provided services in 2019 and 2020. Nationwide, the average total number of oral health providers at FQHCs decreased from 17.7 FTEs in 2019 to 15.8 FTEs in 2020 (-11.0% change). The decrease in oral health providers at FQHCs was highest in the Northeast (-15.3% change) and the West (-11.8% change). The decline was most evident among FTE dental hygienists (-12.5% change nationwide), particularly in the Northeast (-21.8% change). The regions

affected the most were the Northeast and the West where declines in oral health staffing occurred among all provider types. From 2019 to 2020, the ratio of dental hygienist FTEs to dentist FTEs at FQHCs decreased nationwide from 1.0 to 0.7 (-28.4% change). The largest decrease occurred in the West (-53.6% change) and the Northeast (-35.6% change).

**TABLE 6. Oral Health Staffing at FQHCs Nationwide and by Region, 2019-2020**

Oral Health Provider Type and Region	Average # of oral health staffing FTEs at FQHCs		% Change 2019-2020
	2019	2020	
<b>All oral health providers</b>	17.7	15.8	-11.0%
Midwest	17.3	15.9	-8.2%
Northeast	18.1	15.3	-15.3%
South	12.2	11.4	-7.2%
West	23.5	20.8	-11.8%
<b>Dentists</b>	4.7	4.3	-7.7%
Midwest	4.3	4.2	-2.6%
Northeast	5.3	4.7	-11.6%
South	3.3	3.1	-5.4%
West	6.0	5.4	-9.1%
<b>Dental hygienists</b>	2.7	2.4	-12.5%
Midwest	3.3	3.0	-9.1%
Northeast	3.3	2.5	-21.8%
South	2.3	2.0	-9.1%
West	2.5	2.3	-9.5%
<b>Dental assistants, aids, and technologists</b>	10.3	9.3	-9.7%
Midwest	9.8	8.9	-8.4%
Northeast	10.0	8.5	-14.8%
South	7.0	6.5	-6.9%
West	14.3	13.0	-8.9%
<b>Ratio of dental hygienists to dentists</b>	1.0	0.7	-28.4%
Midwest	0.9	0.8	-11.0%
Northeast	1.1	0.7	-35.2%
South	0.8	0.7	-6.4%
West	1.1	0.5	-53.6%

Source: Uniform Data System, 2019-2020. Bureau of Primary Health Care, Health Resources and Services Administration.

## Study Limitations

This study has several limitations. First, secondary data face many challenges and inconsistencies resulting from differences in collecting and reporting the data as well as missing, incorrect, or unavailable information across health centers. Second, data are reported at the organization level; therefore, the current study is not able to account for site-level or provider-level factors (eg, leadership, dental team characteristics, practice patterns) or environmental or state-level factors that are not included in the UDS data that may affect the provision of oral health services by FQHCs.



## Discussion and Conclusions

Researchers at the OHWRC evaluated changes in the number of dental facilities operated by FQHCs, the ability of these safety-net providers to offer dental services, and their levels of oral health staffing (ie, dentists, dental hygienists, dental assistants) based on individual health center-level data extracted and compiled from HRSA's UDS data collected for the years 2019 and 2020.

The current study's findings indicated that nationwide there was a large decrease in the proportion of patients accessing any dental care at FQHCs (from 23.4% in 2019 to 18.9 in 2020; -19.2% change), particularly prophylaxis services (-33.1% change) during the first year of the COVID-19 pandemic compared to 2019. In contrast, the utilization of emergency services for oral health problems increased in 2020 compared to the pre-pandemic year (13.0% change). These results are dramatically different from the trends in direct provision of oral health services published in our previous report that showed that 25.0% to 25.9% of FQHC patients received dental care from 2011-2014, with an average increase of 0.3% per year.<sup>4</sup> From 2011-2014, the proportion of FQHCs' patients receiving oral health services increased the most for prophylaxis services (3% change), while utilization of emergency services decreased (-11.6% change). Similarly, from 2011-2014 there was a slight increase in the number of patients (6.3% change) and patient visits (8.1% change) on average per FQHC.<sup>4</sup> The current study showing change between 2019 and 2020 evidenced a striking decrease in the average number of patients (-21.4% change) and patient visits (-31.4% change) seen at a FQHC.

From 2019-2020, there was also a concerning reduction in oral health staffing nationwide at FQHCs (-11.0% change), especially among dental hygienists (-12.5% change). The ratio of dental hygienists to dentists was most affected (-28.4% change). In contrast, the 2011-2014 study results showed an increasing trend in oral health staffing across all clinicians (12.9% change), particularly for dental hygienists (17.2% change) and in the ratio of dental hygienists to dentists (15.4% change).<sup>4</sup>

The current study also found differences by geographic area in the US. The largest declines in FQHCs' patients receiving any oral health services (-21.9% change), the average number of patients (-26.9% change) and patient visits (-37.4% change) at FQHCs, and the average number of oral health providers (-15.3% change) and ratio of dental hygienists to dentists (-35.2% change) at FQHCs all occurred in the Northeast. These results were not surprising since the Northeast region experienced comparatively higher rates of COVID-19 infection and mortality in the first months of the COVID-19 pandemic than some other areas of the country. According to HRSA's Health Center COVID-19 Survey, 1,954 FQHC sites were temporarily closed by May 8, 2020. Many of those closures occurred in states most affected by COVID-19. There were 25%-73% closures in Connecticut, Massachusetts, and New York.<sup>14</sup> In contrast, the Northeast region saw the largest increase in the use of teledentistry, with a 4.1-fold increase in the proportion of FQHCs in that region providing oral health services through teledentistry in 2020 compared to 2019. Nationwide, there was a 2.7-fold increase.

It will be important to continue to evaluate the impact of the COVID-19 epidemic on the dental service delivery system. It would be valuable to estimate the 10-year temporal trends at FQHCs in order to better understand potential future changes in the provision of oral health services in the safety-net. In addition, provider-level and/or patient-level data in the FQHCs would better enable exploration of the impact of the COVID-19 pandemic on recruitment and retention of oral health workforce and differences in access to oral health services across sociodemographic characteristics of patients.

# THE QUALITATIVE STUDY: KEY INFORMANT INTERVIEWS, 2022

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## Methods

### Data Source

Between May-September 2022, OHWRC project staff conducted interviews with 26 people in various positions at 11 safety-net dental organizations, 9 of which were FQHCs. The interview questionnaire was designed to solicit information and opinions about the impact of the COVID-19 pandemic on oral health service delivery and patients' access to dental services in those settings. The participating safety-net organizations were identified based on guidance from staff at the National Network for Oral Health Access (NNOHA). The dental centers were selected to include provider organizations in each region of the country. The participating organizations by geographic distribution by region were:

#### Northeast

1. Community Health Center of the North Country, New York
2. Whitney Young Health, New York

#### West

3. Petaluma Health Center, California
4. Ravenswood Family Health Network, California
5. Alameda Health Systems, California
6. Salud Family Health, Colorado
7. Terry Reilly Health Services, Idaho
8. Future Smiles, Nevada

#### Midwest

9. Apple Tree Dental, Minnesota

#### South

10. Mary's Center, District of Columbia and Maryland
11. Charlotte Community Health Clinic, North Carolina

Summaries about each of these organizations can be found in Appendix A of this report.

Each of these organizations was sent a letter explaining the project objectives and soliciting participation in the interviews. Once organizational management consented to involvement, each contact was sent the standard interview protocol that had been developed by researchers. The protocol was structured with 4

modules pertaining to the impacts of the COVID-19 pandemic on the organization, its operations, and its workforce. The modules were:

- Module A: Introductory questions and questions about the organization
- Module B: COVID-19's effects on safety-net organizational processes
- Module C: COVID-19's effects on the use of teledentistry services
- Module D: COVID-19's effect on burnout and resilience among the oral health workforce

The interview protocol is available in Appendix B of this report.

Researchers worked with each organization to identify the 26 key informants, each of whom occupied different positions within the participating organizations. Their roles included:

1. CEO/founder/executive director - 2
2. Nonclinical director/manager/supervisory level staff - 6
3. Clinical dental/program director - 9
4. Dentist - 2
5. Dental hygienist - 4
6. Dental assistant - 1
7. Administrative/support staff - 2

All interviews were conducted using the Zoom platform. The majority of interviews were conducted with a single informant, but several included 2 or more participants. Each of the 15 individual interviews lasted between 30 and 45 minutes. The 5 group interviews lasted between 30 and 60 minutes. Each interview was facilitated by a single moderator although 2 to 4 other researchers were passive participants taking notes for later transcription.

## Data Analyses

Following each interview, multiple notes were consolidated to a single transcript detailing informants' insights. When the interview process was complete, all transcripts were uploaded to Dedoose V.9.0<sup>15</sup> for coding and analysis. Two descriptor fields were used to differentiate the transcripts:

- Descriptor Set 1 - Name of safety-net organization
- Descriptor Set 2 - Informant described by primary responsibility

Researchers then applied mixed-coding for analysis of responses using a modified socioecological framework to define effects at 3 levels including the environmental, organizational, and individual impacts of the COVID-19 pandemic on the provision of dental services in safety-net organizations. These impacts were then sorted to 9 common themes that emerged from the consolidated resources. Those themes and the supporting commentary are described in the following pages.

# Findings

## Common Themes

Participants in the interviews spoke both broadly and specifically about the impact of the COVID-19 pandemic on operations, workforce, patients, and programs. The following pages summarize the 9 common themes developed throughout the interview process. Those themes are:

- **Theme 1.** Although the experience of COVID-19 was universal, safety-net providers' experiences differed by location, especially in the early months of the COVID-19 pandemic.
- **Theme 2.** Even though infection control in dentistry is standard procedure, the COVID-19 pandemic required extraordinary precautions, structural alterations to the environment, and strict attention to personal protective equipment (PPE) and dental tools to reduce the possibility of disease transmission.
- **Theme 3.** The challenges of the COVID-19 pandemic were not only clinical but also operational; the service disruption impacted staff in numerous ways.
- **Theme 4.** When possible, workforce was redeployed to other tasks to avoid furloughs and layoffs.
- **Theme 5.** It became necessary to find alternative ways of interfacing with patients.
- **Theme 6.** Reopening to routine services was a gradual process in most places. Dental centers realized the importance of cautious resumption of practice.
- **Theme 7.** COVID-19 impacted patient decision making and ultimately dental health.
- **Theme 8.** Staff were impacted in multiple ways from COVID-19 pandemic-related stressors.
- **Theme 9.** Special grant programs and funding for the safety-net were essential to safety-net provider organizations during the COVID-19 pandemic.

Each of these themes is elaborated on in the following pages. The descriptive paragraphs beneath each theme paraphrase specific comments from the interviewees. While many of the disruptions and mediating strategies were common across the safety-net organizations involved in this research, there were unique circumstances and interesting innovations specific to one or another of the organizations that participated. These are also mentioned.

**Theme 1. Although the experience of COVID-19 was universal, safety-net providers' experiences differed by location, especially in the early months of the COVID-19 pandemic.**

In March 2020, when the first directives limiting oral health care delivery were issued, the local nature of mandates resulted in different experiences for dental providers. Some states required all practices to shutter for routine care while some never mandated closure; others suggested discretion so that dental practices

in those places were seeing partial patient caseloads. As a result, while all providers experienced some disruptions in care provision, the impacts varied across the country.

According to those interviewed for this project, the disruptions to dental practice from COVID-19 shutdowns were sometimes cataclysmic and often catalytic. One interview informant described the experience as similar to a rollercoaster ride, the ups and downs of which were driven by the multiples waves of variants that dictated ongoing vigilance and attention to precautions. Another informant suggested that, despite the current return to quasi-normalcy, the practice of dentistry is experiencing a new normal. Although many informants discussed the negative impacts of the COVID-19 pandemic, many also focused on the positive outcomes.

The experience of COVID-19 not only drove reactive behavior but also proactive thinking leading to practice innovation. The use of teledentistry and drive-through clinics as tools to reach patients increased substantially. The infection control skills of workforce were used in new and innovative ways. And the approach to clinical dentistry took a turn from restoration and treatment to primary and secondary prevention strategies. While some of these responses to the challenges of COVID-19 receded in use once practices were reopened, many are still in use with patients.

Demand in the dental safety-net changed somewhat during and after COVID-19 depending on what was happening in the local community. Many organizations in places where private offices were closed found that demand from the larger local community increased. Safety-net dental organizations were often providing urgent and emergency care amidst increased demand from a broader public for those services. One dental clinic that remained open for emergency services only described this as problematic because word spread that their dental center was providing care and they were inundated. According to the informant, many of the patients who received emergency services during the first critical months of the pandemic have since returned for other services and become patients of record.

**Theme 2. Even though infection control in dentistry is standard procedure, the COVID-19 pandemic required extraordinary precautions, structural alterations to the environment, and strict attention to personal protective equipment (PPE) and dental tools to reduce the possibility of disease transmission.**

Dentists were well prepared for the challenges of infection control posed by the COVID-19 virus. The experience of the HIV/AIDS virus in the 1980s had prompted dentistry to strictly attend to infection control including routinely sterilizing equipment, carefully managing waste, and always using PPE. In addition, certain safety-net organizations also had prior experience with outbreaks in nursing homes and were immediately aware of the need for N95 masks. The high rates of transmission and the initial lack of knowledge about the pathways of COVID-19 infection posed some new challenges and required even more extensive precautions. One informant commented that preparations for treating patients during a pandemic required detailed planning using multiple, expansive scenarios to evaluate spacing between patients, handling and

disposal of waste, and risk mitigation. All informants spoke of change in infection control protocols to protect clinicians and patients.

Environmental adjustments included:

- Needlepoint bipolar ionization units, high efficiency particulate air (HEPA) filters and filtration units for air purity
- Separation of administrative spaces with plastic barriers
- Reduction in waiting room furniture to create social distance and to prevent patient accompaniment unless necessary
- Leaving a contiguous dental hygiene operatory empty, not using proximate spaces
- Creating a one-way traffic pattern (in one door, out another)
- Installing a doorbell with camera
- Operatory room guidelines including disinfecting after each patient and employing fallow time for air turnover

Equipment and treatment modifications:

- Use of extraoral suction, extraoral filtration systems,
- Use of panoramic x-rays instead of bitewing
- Use of glass ionomer sealants to eliminate the need for an air compressor
- Use of silver diamine fluoride to avoid drilling
- No aerosol generating procedures unless for urgent care

Precautions for patients:

- Pre-appointment screenings
- Appointment spacing – limiting the number of patients in the dental center
- Temperature checks at door
- Screening form at door
- Mask mandates except in dental chair
- Rapid tests especially if planning a surgical intervention
- COVID-19 vaccines available on site
- Elective procedures put on hold

Precautions for staff:

- Vaccine mandates for staff
- Use of both disposable and reusable gowns, head covers, shoe covers, and safety shields
- Education in proper donning and doffing of PPE
- Handwashing guidelines
- Limited appointments (ie, 2 patients every 90 minutes)
- Use of a laundry service to clean and deliver scrubs. Staff brought clean clothes to work and left dirty scrubs behind so that contaminated clothing was not brought to homes.

Interestingly, the increased precautions had some negative repercussions. One interview participant commented that she generally worked with children and some of those she cared for were frightened by the amount and extent of the PPE she wore. This is important since fear of the dentist is identified as a barrier to care.

Difficulties with the supply of PPE also varied. Dental centers embedded in large health care organizations such as hospitals indicated little difficulty with having enough PPE but those who provided care in smaller organizations discussed their experiences. One mentioned visiting suppliers' websites at all hours of the day and night in order to assure availability. This provider also regularly visited local Sherwin Williams paint stores which carry N95 masks for painters.

The cost of PPE was also discussed; as demand increased, so did cost. In several places, private dental insurance companies enhanced reimbursements for a visit by about \$10 to cover the extra cost of PPE and infection control. However, public payers did not.

**Theme 3. The challenges of the COVID-19 pandemic were not only clinical but also operational; the service disruption impacted staff in numerous ways.**

While clinical staff were definitely affected by the inability to provide patient services, support staff and administrative personnel were also impacted. Administrative staff were working overtime to find ways to pay for PPE procurement and to apply for grant programs to allow provider organizations to keep staff on the payroll and maintain operations.

Staff were also working on the policy front to keep policymakers and public health officials aware of the importance of dentistry and oral health. One informant remarked that, in their state, dental practices were asked to surrender available PPE to hospitals. Staff responded by lobbying lawmakers to keep PPE in the dental safety-net. Without PPE, dental providers would be unable to address urgent needs and patients with dental emergencies could further burden capacity in hospital emergency rooms that were already in crisis serving patients affected by COVID-19.



The nationwide polarization about vaccination, testing, and wearing a mask affected safety-net patients and dental center staff. Organizations generally assumed an agnostic policy perspective explaining to patients and staff that they were required by law to follow certain public health mandates so choice was not an option. However, at times, these topics were a source of stress.

Some organizations had no choice but to furlough a large percentage of their clinical and administrative staff. Informants described this as disheartening, something that had never been faced on such a scale. One organization developed educational materials for employees on how to apply for unemployment. Questions arose that were difficult to answer because the duration and intensity of the COVID-19 pandemic was unknown. Executive staff strived for transparency about the future of the organization, but it was difficult with so much uncertainty.

One organization paid half the cost of furloughed employees' health coverage and another continued health insurance coverage, including employees' cost of coverage for 3 months. These initiatives relieved some of the pressure on employees and their families. Organizations worked hard to be as adaptable as possible with employees' time away from work. They also adopted other flexible policies such as those related to issues with childcare. Entire staffs eventually returned to work but it took months in many places to accomplish that.

#### **Theme 4. When possible, workforce was redeployed to other tasks to avoid furloughs and layoffs.**

When the closure of dental centers was required, an immediate problem was employing that workforce, especially clinical providers, in alternative capacities. The ability to redeploy workers depended very much on the size of the staff, the type of organization in which the dental center was embedded, and the financial resources available to support staff retention. The challenges of task shifting were different for administrative versus clinical staff, who usually spent work days treating patients. Administrative personnel were more easily shifted to different clerical duties and tasks.

Many informants discussed rotating clinical staff when closures were in effect and only emergency patients were treated. The dental team that was scheduled to work one week would not work the next. This enabled staff to remain clinically active, helped to manage stress, and allowed the organization to minimize the number of furloughed staff. In some dental centers, staff took voluntary furloughs to address family needs or because they preferred not to be providing clinical services during the early days of COVID-19 when little was known about prevention or treatment of the virus.

In FQHCs with a diverse menu of health services and in hospital systems where the dental services units are embedded with other medical and behavioral health providers, the opportunity for redeployment was greatest. Dental staff in some FQHCs were sent to COVID-19 testing and vaccine administration sites, to make hand sanitizer, and to help with infection control activities in various areas of the health centers. Some dental staff were sent to knock on doors of at-risk patients to check on their welfare. In other locations,

dental staff moved to the medical side of the organization and were assigned to various administrative tasks including ordering PPE and conducting inventory of supplies.

The dental centers also used staff in different ways within the dental clinics. Some dental hygienists were assigned dental assisting functions. Some worked on dental chart audits, clerical duties, scheduling, making hand sanitizer, disinfection of spaces, or providing teledentistry services. Dental assistants helped at the front desk with scheduling appointments and handling phone calls.

Several informants spoke of the demand within institutional pharmacies during the early months of COVID-19 due to the need for more antibiotics, COVID-19 treatment medications, and other prescriptions. Dental center staff in hospitals and FQHCs helped in those dispensaries and were tasked with answering telephones, screening, intake, delivery, and running medications to medical clinics that were treating patients. Dental clinicians were also charged with supporting the hospital emergency room when dental patients presented with emergent dental needs.

In one dental center embedded in a hospital, staff were unionized; the hospital, including the dental center, has remained pretty fully staffed throughout COVID-19. As the COVID-19 pandemic progressed, some staff were eventually furloughed; some took voluntary furloughs for family or health concerns. Others worked part time from home doing chart audits.

One smaller dental not-for-profit organization instructed their workforce to find ways within the local community to contribute to the needs of patients. Staff were creative in selecting their work alternative. Some worked with the local cable company and a community organization tracking children in schools who had not picked up computers and instructional materials for use in virtual classrooms when schools were closed. Others spent time making dental “goody” bags that included toothbrushes, toothpaste, floss, mouthwash, and at times, face masks and gloves for consolidation with food and meal kits. Many worked at food banks and distribution centers at pickup times. Others partnered with schools and churches at events where oral health materials and supplies could be offered. Schools also reached out to the organization for help with students with dental problems who were normally served in the organization’s school oral health programs.

Some dental centers used the time with no patients to redesign work processes and rearrange the dental clinics. One center, which was located in the historical wing of a hospital, was able to work with staff to update the space for more efficient use, to redesign work flow, and to optimize the environment for dental services at reopening. Another dental center realized that the hiatus from patient care was an advantageous time to complete a planned software conversion to a new electronic dental record.

Informants reported that initially some staff were uncertain about performing tasks for which they were not trained but generally there was little pushback from the workforce. Many were satisfied to be doing helpful things. Informants throughout the interview process reiterated the importance of being transparent with staff and keeping them regularly updated on what was happening within the organization. This made staff feel trusted and reduced anxiety throughout the months of the COVID-19 pandemic.

## Theme 5. It became necessary to find alternative ways of interfacing with patients.

Many of the providers who participated in this research had prior experience with mobile and portable dentistry and the use of either synchronous or asynchronous teledentistry; these experiences were especially useful at COVID-19 onset. The closures of schools and the prohibition of visitors and outside personnel in nursing homes were especially difficult because many of the patients served in mobile programs at these community sites were vulnerable to progressive dental disease.

The inability to schedule face-to-face visits with patients for a prolonged period was obviously problematic. Prior experience with portable dentistry and teledentistry proved advantageous since the processes and equipment used in these programs could be used to engage a broader group of patients during COVID-19. Even organizations that had no past experience with a teledentistry platform worked with their information technology staff to create safe programs to directly interface with patients. One organization had 2 full-time dentists providing synchronous teledentistry services to provide diagnostic services beginning in April 2020; about half of the patients who participated were living in rural areas.

Teledentistry was especially important for nursing home patients who were under tight restrictions. Dental clinicians were subject to the guest policy in many nursing facilities instead of being considered essential medical personnel. A further complication of COVID-19 was that many nursing homes became understaffed during the COVID-19 pandemic and after reopening so they were unable to host dental visits. Virtual services were, thus, an important alternative to in-person care.

One interview participant discussed teledentistry as a useful tool for triaging patients to appropriate care, to determine who was most in need of urgent care and expedite those services, and to provide palliative antibiotics when necessary. The need for urgent services was so great over time that once the dental center reopened, the scheduler maintained a morning and afternoon slot just for emergency patients.

In another center, patients or parents would send photos of a problem tooth to the provider before completing a virtual visit. When children were involved, the FQHC would send a fluoride kit to the home prior to the scheduled teledentistry visit. The kit contained fluoride, a brush, gauze, and gloves. When the clinician was conducting the virtual visit, the provider would instruct parents on how to apply the fluoride.

Other providers innovated with drive-through clinics for children providing x-rays with portable equipment and conducting an exam while the child remained in the car. Clinicians would meet the car outside the building, review symptoms, provide education, and offer fluoride varnish or silver diamine fluoride treatments where appropriate.

Some dental staff were redeployed to help medical assistants and providers with drive-through services for patients with diabetes or high blood pressure providing education on preventive health behaviors. Other organizations developed PowerPoint presentations and videos and made them available to their patients. In some places, providers from mobile dental teams offered video education to their patients. One health

center was able to obtain state approval to continue to operate a mobile health and dental program for people without housing which was limited to emergency services only.

Many schools began remote learning beginning in spring 2020 and continuing through the 2020-2021 academic year which disrupted school-linked oral health programs. Many of these school dental programs only saw patients through virtual visits for more than a year and then, only when they were notified by schools or parents of a particular need.

Many of the informants from case study sites with mobile and portable dental programs indicated that these programs experienced delays in resuming care even after in-person services were available. Providers were slow to restart the programs to ensure proper precautions such as using longer gowns, head covers, and booties. Many had still not returned to the pre-pandemic level of program activity at the time of these interviews.

A few organizations had changed from providing portable dentistry services in schools to using mobile dental vans outside of the schools. According to some, treating children in a van during COVID-19 reduced program capacity since only one child could be seen at a time because of the enclosed space. In addition, fallow time between encounters further limited the number of children seen in a day. These circumstances were also more difficult for some school children in the program since prior to COVID-19, they would often see the dental hygienist accompanied by classroom friends. It had to be a solo appointment during COVID-19.

One provider also commented that in the past they would visit multiple school sites in a day but new protocols limited them to one site per day. Regardless of the limitations, schools were happy the programs have returned since many children had significant oral health needs.

Other providers changed treatment materials to better accommodate the challenges of COVID-19 while still meeting the needs of children. One clinician discussed how prior to COVID-19, the portable dental program had used sealants that required light, water, and compressors to dry. During COVID-19, they converted to air drying sealants that take 10-15 minutes to set. As a result of that change, they treated more children in a shorter time. In addition, the costs of services were reduced because they no longer needed compressor equipment.

According to informants, relationships with schools are stronger than ever; administration and teachers were happy about the return of the dental programs. The need for services among school children was evident to clinical providers who commented on increased dental decay among these patients. Informants also commented that more parents were returning consent forms for dental services in schools than in years prior to the COVID-19 pandemic. The increased participation was attributed to prolonged delay in getting preventive dental care. One dental hygienist compared decay across timeframes indicating that pre-pandemic about 30% of children seen in schools needed further care. About 20% presented with early decay and 10% had urgent needs. After the most difficult months of COVID-19, the distribution had reversed such that 20% of children had urgent dental needs.

## Theme 6. Reopening to routine services was a gradual process in many places. Dental centers realized the importance of cautious resumption of practice.

Several informants discussed the decision to reopen their dental service centers gradually by staging patients' return to clinical services. Dental centers initially limited the number of patients each day to prevent prolonged waiting time in the clinic and to allow for air turnover.

Patients were sometimes wary about returning to dental practices. These fears were somewhat dispelled by dental staff who offered reassurance that the screening practices and infection control protocols were protective of patients. Many of those who participated in the interviews indicated that despite patients' concerns, there was still high demand that was creating delays in patient scheduling. One informant described the conundrum as "we can meet the needs of patients, but we can't meet all needs in a timely fashion." Additionally, at reopening, patient care was more demanding due to the increased severity of dental disease complicated by patient anxiety about the COVID-19 pandemic and virus transmission.

Centers were trying to re-establish a timely 6-month recall schedule but that was challenging for many in light of the pent-up demand. Several commented that new patient waits for appointments were longer than desirable. And many lamented that delays were regrettable because patients had no timely recourse to other providers. One informant commented that they reserved 2 slots per day for emergency services, but demand was still high.

Other informants commented about the difficulties of reopening when the dental center was embedded in a larger organization especially if it was fully integrated. These dental centers encountered more bureaucracy and red tape, with longer approval times for reopening plans and redesigned care processes than in smaller organizations.

Dental directors had to balance operational and patient needs when thinking about the best paths to reopening. One informant described it as a "slow roll" with just a few patients a day; limited services like examinations, cleanings, and extractions; strict social distancing; and rigorous cleaning of operatories and public spaces. Most practices started with services that didn't produce aerosols like x-rays, exams, silver diamine fluoride, and antibiotics for children with decay or infection.

One problem was that many of the dental centers lost workforce during the COVID-19 pandemic which affected patient care capacity. Informants lamented that it was impossible to meet demand when there were vacancies for clinical workforce. Some discussed the importance of dental assistants who prepared patients, finished services, cleaned rooms, and efficiently rotated patients. When there were vacancies in those positions, it limited how quickly the centers could treat patients and turnover rooms.

## Theme 7. COVID-19 impacted patient decision making and ultimately dental health.

Several interview participants spoke of ambivalence among patients about dental care during the early months of COVID-19. Patients were conflicted, expressing fears that if they removed their mask for dental services, they might contract COVID-19. Some did not consider dental care a crucial need and many were hesitant to return to care once practices reopened. Several informants stated that staff would explain the office's protocols and precautions to prevent virus transmission which usually eased patients' discomfort. Generally, patients appreciated the risk mitigation protocols in the dental centers. According to informants, the biggest complaint was that there was limited access to services due to understaffing and recall visits for preventive services were not timely.

Closing the dental centers was difficult in many places because there had been long waiting lists for dental services prior to COVID-19. At closure, centers had to contact patients who were finally scheduled after long waits and tell them that their appointments were going to be further delayed. As a result, many elective, preventive needs of patients in early 2020 became emergent needs over the duration of the COVID-19 pandemic.

As plans for reopening dental centers proceeded, practices first reached out to patients who had been in the process of completing a treatment plan prior to the COVID-19 pandemic or patients with known urgent dental needs. Next came patients of record who were behind in routine care. Many of the patients seen in the dental centers were established with those practices prior to COVID-19, but many sites also reported new patients seeking services.

Oral health status declined for patients in the safety-net during COVID-19. Informants observed that many children were coming in with untreated decay marked by an increase in the need for endodontic referrals. Many of these children had an early need for dental services in pre-pandemic months that morphed to serious decay during the COVID-19 pandemic. Several providers mentioned that when children were at home wearing masks or back at school and masked, they weren't brushing their teeth as often. Parents seemed very ready to get dental services for their children when they finally became available. Adults also presented with more decay and more fractured teeth due to stress and grinding when they finally returned to care.

School closures had an unexpected and deleterious impact on the health of children's teeth. Some families relied heavily on school meals which were sometimes more nutritious than those available at home. Children drank milk regularly at school but at home they consumed whatever was available including juice and soda. There was unhealthy snacking and teeth suffered due to the length of the COVID-19 pandemic.

Job loss during COVID-19 also impacted patient decision making. One interviewee spoke of a conversation with a patient about saving a tooth by performing a root canal and placing a crown. The patient had lost his job and with it, his dental insurance. He was unable to afford the conservative treatment, so he decided on tooth extraction. Another informant described a patient who was trying to save enough money to buy

chlorhexidine mouthwash. Several commented that more children were enrolled in Medicaid or were uninsured than prior to the COVID-19 pandemic. Some enrollees fell out of the Medicaid system when automatic re-enrollment ended, and for others, job loss precipitated enrollment in Medicaid. Several of the dental centers employed enrollment specialists to help people with applying or recertifying for Medicaid.

Interview participants lamented that practice closures were especially hard on patients with special health needs. Access to specialty services for those populations prior to COVID-19 was often severely limited with extensive waits, sometimes as long as 2 years, for an appointment. Then COVID-19 intervened, and those appointments were deferred or cancelled adding another layer of barriers to an already difficult system of care for exceptional populations.

#### Theme 8. Staff were impacted in multiple ways from COVID-19 pandemic-related stressors.

The COVID-19 pandemic created environmental, organizational, and individual stressors that had an impact on everyone but especially the health workforce. The stressors were significant and numerous, always ubiquitous but sometimes circumstantial. Clinical staff were concerned about the risks inherent in caring for patients including transmitting a highly contagious virus. One of the biggest problems was the uncertainty of the COVID-19 pandemic duration. First it was weeks, then a few months, a whole summer, and then years. There were financial stressors including personal or spousal unemployment, closures of schools and childcare providers, health concerns about getting the virus and deaths of family members from the virus.

The changes in protocols and processes at work also caused dismay. Lunchrooms were closed because they were gathering places for staff; staff were eating lunch alone in their cars. Safety protocols were rigid and interrupted social interactions. However, many staff felt safe at work because of the infection control precautions; they did not have to worry excessively about transmission, especially if they were using PPE properly.

Organizational leadership from several organizations commented on the importance of not discounting employees' fears because there were very real stressors experienced differently by the individual circumstances of staff. Administrators tried to listen to the problems, help where possible, and pivot work plans as needed.

Dental clinicians are often perfectionists about their work, but COVID-19 taught many to do less to solve a dental problem. The elimination of aerosol generating procedures caused clinicians to think carefully about appropriate treatment services, to be realistic about interventions, and to be more cautious about expectations. There was a greater reliance on sealants and silver diamine fluoride than prior to the COVID-19 pandemic.

Several interview participants spoke of a drop in morale during the COVID-19 pandemic with more depression and burnout among staff. It was difficult to remain positive when demands were high and ever-

changing. Staff that were working were consistently busy and often unable to take breaks. Others were doing extra work to cover the duties of absent co-workers who were ill or out of work due to family issues. Some staff were more easily frustrated and dental teams were impacted. Some were unhappy about being assigned to nondental jobs with which they were unfamiliar. Several organizations re-examined employee assistance programs to offer appropriate resources especially for mental health counseling.

Recruitment to the dental safety-net was always a problem, but it is now an even bigger challenge than during pre-pandemic times. The COVID-19 pandemic precipitated “the great resignation” with people thinking more seriously about their futures and some deciding to retire or change careers. Some workers left because they resisted the vaccine mandate; others made the choice to leave due to family obligations. Most of the turnover was in entry-level roles such as reception and care coordination and the reasons included childcare, school schedules, and being a single parent.

FQHCs were still not at pre-pandemic levels because of staff departures and the increased clinical time allocated to safety-related practices and processes. Workforce shortages were limiting the number of patients who could be seen. It was difficult to hire dental hygienists who are important preventive service providers. Safety-net dental providers had a harder time recruiting dental hygienists than private dental practices because the work is a bit more demanding, the hours are often longer, and at times, the pay is less. Some organizations increased pay to find qualified workforce.

Dental assistants were also scarce. Dental assistants could be hired and trained on the job, but it was hard to find people with the right work ethic to learn the work and stay in the safety-net. Dental assistants are essential to workflow; they prepare patients and operatories which allows for smooth transitions and for treating more than a single patient at a time.

Several informants commented that they had to rebuild trust in the workforce after furloughs. Many agreed that it would take time to restore a more pervasive feeling of normalcy.

### **Theme 9. Special grant programs and funding for the safety-net were essential to safety-net provider organizations.**

Many of the safety-net dental organizations that provided interviews received federal and state assistance during the COVID-19 pandemic. One informant commented that their organization had qualified for 19 or more COVID-19-related special grants or funding programs. Federal assistance was by far the most helpful along with some unique state funding resources. Another informant commented that federal funding allowed the organization to purchase air purifiers and digital sensors for x-rays.

One of the safety-net organizations commented on their reliance on grant funding for regular operations and the difficulties with that reliance as a result of the COVID-19 pandemic. Several of the grantors had curtailed funding for dental programs to divert resources to food banks and programs addressing food insecurity. As a result, the dental organization was seeking ways to cut costs on nonessential items such as



eliminating bib clips in their mobile program and using a different sealant material, and was also spending time looking for alternative sources of funding.

All organizations talked about the escalating costs of PPE and for some, the difficulty with finding it. Some insurance companies added a stipend to claims to cover the PPE. One participant commented that cost of care went up approximately 30% especially with so many supply chain disruptions. There were unusual expenses like contracting with a laundry service to clean and deliver scrubs for staff so that soiled garments were not going to homes. Interview participants commented on the increase in costs to deliver services at a time when revenue from services had decreased.

## Study Limitations

The *qualitative* component of the study had several limitations. Foremost was the small sample comprised of staff at 11 safety-net organizations in a few states. Therefore, the study findings may not apply to all safety-net organizations. Furthermore, the coding of interview transcripts was conducted by one researcher, limiting the ability to test for inter-coder reliability.

## Discussion and Conclusions

The COVID-19 pandemic impacted provision of dental services in the safety-net organizations that participated in this study. The disruption of care was immediate and precipitous at the onset of COVID-19, yet the return to “normal” operations is much slower, more methodical, and constantly challenging. Although it is almost 3 years since COVID-19 began to affect health care, the true impacts on patients and providers are still unclear. The interviews for this project revealed that many organizations were proven to be both resilient and adaptable. One informant described a new perspective on care after the ability to provide services was so unexpectedly disrupted. He commented that catastrophe can lead to alternative ways of providing care that can still serve patients. The same informant remarked that COVID-19 was a catalyst to move strategic planning in organizations in a new direction so that safety-net providers can continue to meet the needs of their patient communities over the long term.



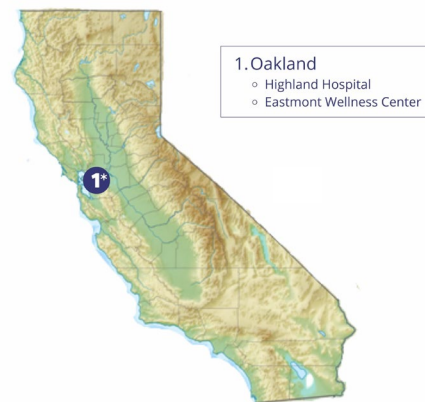


# APPENDIX A

## APPENDIX A: CASE STUDY SUMMARIES

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This Appendix contains the individual summaries describing the organizations that participated in the interviews for this project.



## Alameda Health Systems

### Background

Dentists at Alameda Health Systems (AHS) provide general dentistry, reconstructive surgery, prosthodontics, dental implants, oral surgery, pediatric dentistry, and full-mouth rehabilitation under general anesthesia. Adult oral health services are provided in Highland Hospital which houses a dental center with 11 operatories. The oral health program treats a variety of special populations including those with intellectual and developmental disabilities, older adults living in nursing facilities, and victims of crimes and/or severe trauma. Clinical staff are able to perform full-mouth rehabilitation on populations that have difficulty with receiving care in a conventional dental setting. AHS hosts a general practice residency program and an oral and maxillofacial surgery residency program at Highland Hospital. Pediatric dentistry is available in the community at Eastmont Wellness Center which is a Federally Qualified Health Center (FQHC) operated by AHS off-site from Highland Hospital.

### COVID-19 Response

Staff in the dental clinic are represented through unions which helped to prevent layoffs during the COVID-19 pandemic. However, workforce throughout the hospital system were redeployed or redirected to alternative tasks as needed to avoid furloughs. The hospital offered dental providers training in administering COVID-19 vaccinations to help with vaccination efforts; some took advantage of this opportunity. AHS formed a Restoration Oversight Committee to mitigate patient and staff risk throughout the entire system. Since unionized staff receive excellent benefits, most staff stayed with the dental center throughout the COVID-19 pandemic. Only 1 staff member left due to family issues.

During the early months of the pandemic, AHS provided only emergency dental services; the dental center fully reopened in June 2020. The dental team continued to staff a mobile dental program for people who were homeless; they also used teledentistry to provide services. The mobile program was initiated because a county-wide needs assessment found that, among people who were experiencing homelessness, the primary need after housing was dental care. Dentists traveled in vans to provide screenings, develop treatment plans, and provide links to dental and other health services for those without stable housing or for people who are unable to physically travel to the dental center. The mobile program is supported with funds from the county as well as reimbursement from any insurances. This method of delivering services is in concert with the mission of AHS, which is to provide optimal levels of care to California's most vulnerable populations.

## Dental Care Via Telehealth

The challenges of COVID-19 propelled AHS to consider instituting a virtual dental home program. AHS researched virtual programs and investigated electronic platforms, settling on Doximity. Unfortunately, some patients encountered barriers to using teledentistry, including a lack of access to the technology and/or the Internet. Staff also encountered some lack of trust from patients, especially elderly patients, regarding teledentistry. A few providers were reluctant to adapt to virtual visits. However, the majority of providers and patients enjoyed the teledentistry program; most felt comfortable utilizing technology to conduct dental visits. The teledentistry program made a positive contribution to care, especially during COVID-19, by allowing continued access to services for the patient community. As the teledentistry program grows from a simple online platform and is combined with mobile dental services, it will help more and more patients gain access to the dental clinics at AHS. AHS was part of the National Network for Oral Health Access' teledentistry learning collaborative from the fall of 2020 to the spring of 2021. AHS was able to grow the use and acceptance of teledentistry during that time. More virtual teledental visits were incorporated into the clinic's schedule. Some providers are allowed to work remotely focusing solely on teledental visits throughout the day. Currently teledentistry makes up approximately 10% of the dental visits and about 15% of oral maxillofacial visits.

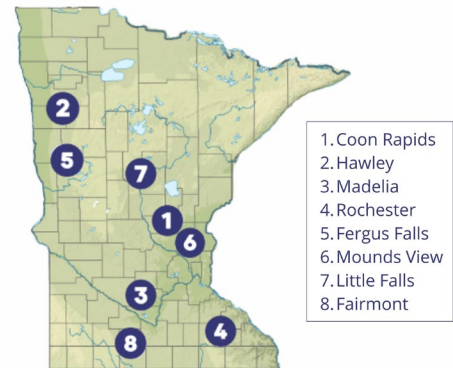
## Burnout and Resilience

During the early months of COVID-19 there was a steep decline in the number of dental patients at AHS. The dental department used this downtime as an opportunity to participate in a Lean Project Management effort supervised by "the star team" in the dental department at AHS. They cleaned out the clinic, disposing of old material and equipment, and reorganized the dental center in a more orderly fashion. These efforts were helpful during reopening since the reorganization helped staff and providers to more efficiently deliver care. Burnout mostly affected directors and administrative staff who were stressed during the reopening of dental services with ensuring appropriate infection control. In addition, they were concerned about the morale of the workforce and the ability of the system to support them and the additional operational needs for reopening to patient care during such critical times.



## APPLE TREE DENTAL

Access • Compassion • Excellence



### Apple Tree Dental

#### Background

Apple Tree Dental (ATD) is a nonprofit community dental organization headquartered in Mounds View, Minnesota, founded in 1985 to provide mobile dental services in long-term care facilities. In 2022, ATD provided dental services in 8 Centers for Dental Health throughout Minnesota and on-site through mobile dentistry programs in more than 145 schools, day care centers, community residences, skilled nursing centers, Head Start programs, and other locations. During its 37-year history, ATD clinicians have provided more than 1.3 million dental visits. As of mid-2022, over 200 employees of ATD served 34,000 patients in over 90,000 visits annually. More than 80% of patients are Medicaid eligible and many are uninsured. The mission of the organization is to overcome barriers to oral health. In concert with that mission, ATD has adapted clinical spaces with equipment and features that accommodate both adults and children with special needs. This includes advanced dental services for people needing intravenous sedation and pediatric general anesthesia.

#### COVID-19 Response

While the COVID-19 pandemic onset in March 2020 was disruptive, ATD was well prepared to adapt to its demands. ATD had experience with disease outbreaks in long-term care facilities because of its long history and experience gained from working in those environments. ATD management quickly recognized the need to ramp up supplies of N95 masks and PPE, positioning them to adjust to the crisis. They utilized infrared technology to sterilize masks and safely reuse PPE. ATD established and received authorization to conduct COVID-19 testing as well as procedures for tracking positivity rates in the counties served. These preparations allowed ATD to remain open for emergency services during the COVID-19 pandemic.

However, as a result of closures of facilities, day programs, and schools, all mobile services ceased. Due to the size of the organization, its reach and involvement in local communities, and the mandate to cease all but emergency care, ATD was forced to furlough approximately 75% to 80% of its staff. As the situation became better understood, ATD was able to bring back about 50% of the workforce. ATD was concerned about staff during the furlough period, so they committed to continuing their health insurance coverage during that time. ATD also developed education programs to inform staff about applying for unemployment. Over time, and with the gradual reopening of community sites, nearly all the staff has returned and new

employees have been added. Quarantine and illness have continued to impact staffing levels.

During the first months of COVID-19, ATD clinicians served approximately 5,000 emergency dental patients, using only nonaerosol producing procedures. ATD also introduced needlepoint bipolar ionization units for air purification and other methods to decrease the likelihood of spread of the virus within their clinics. By the end of 2021, ATD had nearly returned to the pre-pandemic level of visits, continuing to provide patient care within their dental centers and in their mobile programs as conditions allow. ATD conducted a readiness survey of the long-term care facilities within their catchment area enabling them to return the mobile teams to practice.

## Dental Care Via Telehealth

ATD had extensive experience with teledentistry and was able to offer oral health screenings and assessments when routine services were not available during the COVID-19 pandemic. ATD first deployed a teledentistry program in the early 2000s which was managed by dental hygienists in remote settings with children. The dental hygienists used laptops to record findings and intraoral cameras to acquire images that were then interpreted remotely by dentists. During the COVID-19 pandemic, teledentistry was especially useful and successful with patients living in nursing homes since visitor protocols in those facilities would not permit outside personnel to enter.

ATD also modified their usual treatment protocols which required an in-person visit to complete an assessment followed by a later visit for any necessary procedures. The supply and costs of PPE, the need for pre-visit screenings for COVID-19 exposure, and the time and costs of on-site infection control suggested that changing that initial visit to a teledental visit might preserve scarce resources and supplies at the dental center for those with the most emergent dental issues. The teledental assessments allowed clinicians to screen patients, assess risk, and triage care so that only those who had acute needs were scheduled for in-person care. ATD developed their new teledental protocol using the Microsoft Teams platform. They were able to quickly train staff and to install software on phones and tablets linked to the ATD system so that patients and clinicians could interface.

## Burnout and Resilience

Burnout among staff was certainly an issue especially during the early months of COVID-19. The stress that staff experienced was not just employment related; the COVID-19 pandemic interrupted normal daily activities like school and childcare which was a significant issue for some staff. In addition, development of vaccinations for children was delayed, exacerbating concerns about infection. ATD worked with staff to provide flexible scheduling and to be understanding about childcare; still some staff either left or changed jobs to better accommodate their family needs.

ATD did its best to combat burnout and foster resilience by offering mental health support and other



resources through the employee assistance program (EAP). A counselor from the EAP program made a presentation to staff to ensure that everyone was informed of the available services. Although staff was stressed and uncertain about so many unknowns related to COVID-19, they were able to work together to support each other and their patients.



1. Charlotte

## Charlotte Community Health Clinic

### Background

Since 2000, Charlotte Community Health Clinic (CCHC) has been supporting its community in Charlotte, North Carolina supplying a variety of health services including medical care, behavioral health, and dentistry. In 2015, CCHC became a FQHC and added dental services in 2016. Dental services are delivered in a CCHC satellite site and also through a school-based oral health program. Dental services include comprehensive examinations, cleanings, restorations, extractions, and root canals for adults and children. The school-based oral health program provides oral health education and preventive screenings with referrals to the FQHC dental clinic for children in need of restorative services. The dental clinic at CCHC's Goodwill Opportunity Campus is staffed by 2 dentists, 1 dental hygienist, and 2 dental assistants. CCHC's patients include many low-income people, some of whom are homeless; many patients are Hispanic and speak Spanish. Dental patients are both children and adults; children are also served in the school dental program.

### COVID-19 Response

In 2020, in the initial months of the COVID-19 pandemic, CCHC closed the Goodwill Opportunity Center, which included the dental center. Staff began utilizing teledentistry to screen patients and triage need. CCHC made an effort to redeploy dental staff to other duties within the medical clinic to avoid furloughs. When appropriate, patients were referred to other locations within the Charlotte community that were open and providing services not available at CCHC. When the FQHC reopened in August 2020, CCHC established new safety protocols at their health centers for patients who needed emergency services. CCHC limited services to 2 patients every 90 minutes using air purifiers to sanitize the exam rooms and dental operatories during and between patient visits.

### Dental Care Via Teledentistry

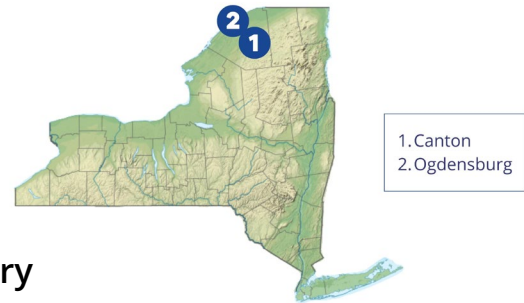
Initially, efforts to connect with patients via a telehealth digital platform, MouthWatch, experienced a false start when CCHC staff had difficulty using the technology. CCHC switched to doxy.me with more success. Staff mainly contacted pediatric patients and their parents providing teledental visits approximately one day a week. Teledentistry was also utilized within the schools once all personnel were educated on use of the technology and once access to the schools was re-established. CCHC constructed a specific protocol for these teledentistry visits. A dental assistant would contact the patient and request that they send intraoral

photos to a HIPAA-compliant platform. The dentist would review the photos and gain an understanding of the pertinent problem and begin diagnosis. The patient would then be contacted by clinic staff to obtain a medical and dental history, review medications, ascertain the presence of any dental pain and the specific dental problem that prompted the need for services. A full telehealth visit lasting about 30 minutes would then be scheduled. The dentist would prescribe antibiotics as needed for infection and address any immediate concerns or symptoms to hopefully prevent an emergency room visit by the patient.

One outcome of using teledentistry is that patient chair time is reduced. Dental staff are currently educating school nurses on how best to utilize the teledentistry platform to send dental information about a child directly to the clinic prior to direct services in the school. The benefit is that children lose less time from school and parents are able to take less time from work to help children get dental services.

### Burnout and Resilience

The factor that created the most stress for staff during the COVID-19 pandemic was the unknown, including uncertainty about when it would end, when and whether patient care would resume, and if staff would keep or lose their jobs for the duration of the crisis. During the most uncertain months, administration and executive leaders constantly and clearly communicated with staff to share what was happening. The oral health team supported each other and, through that support, was able to provide essential care for patients.



## Community Health Center of The North Country

### Background

The Community Health Center of The North Country (CHCNC) began in 1975 as a subsidiary of the United Cerebral Palsy Association of the North Country in Malone, New York. Initially, the health center's service population was mainly people with intellectual and developmental disabilities. In 1987, the organization qualified as a diagnostic and treatment center in the state expanding its mission to include the larger community. In 2007, CHCNC received designation as a FQHC which resulted in federal support for health care delivery activities. CHCNC, which began in Canton, New York, now operates 4 additional health centers in Malone, Watertown, Gouverneur, and since January 2020 (just prior to the onset of the COVID-19 pandemic), in Ogdensburg. In 2020, CHCNC served approximately 12,400 patients; almost 70% were Medicaid/Medicare beneficiaries and approximately 5% were uninsured. CHCNC offers primary medical care, optometry, behavioral health, and dental services in addition to a menu of adjuvant services, including managing the WIC program for 2 counties.

The dental team includes 2 dentists, 1 full-time dental hygienist, 3 part-time dental hygienists, and 5 full-time dental assistants allowing the health center to provide comprehensive oral health care for patients. Dental services are provided in dental clinics in Canton and Ogdensburg. The FQHC has a dental sealant program staffed by a dental hygienist and dental assistant covering 22 schools in 17 districts. This team uses mobile equipment to provide oral health education, screenings, sealants, and fluoride varnish to children with parental consent.

### COVID-19 Response

COVID-19 impacted health services delivery at CHCNC. From March-June 2020, the dental department and the mobile dental program were closed to patients, except for emergency services. Reopening in June 2020 was slow paced to ensure the safety and well-being of both patients and staff. Unfortunately, during the tumultuous months of COVID-19, the FQHC lost 2 dentists but were fortunate to hire 2 new dentists, 1 from the local community, to effect service delivery. Fortunately, CHCNC lost no auxiliary dental team members with closure. However, CHCNS found it difficult to hire new staff during the COVID-19 pandemic, especially dental hygienists and dental assistants, with 2 vacant positions open for the dental program.

The COVID-19 pandemic also affected the cost of operations for the organization and for its dental centers. From the early months of COVID-19 to present day, CHCNC worked hard to obtain and provide PPE for

the health centers' clinical teams and staff. Grants were obtained to help with the fiscal impacts and the FQHC also collaborated with other agencies to acquire an appropriate supply of PPE. Air purifiers were purchased and were used in tandem with face shields when providing aerosol generating procedures for patients. These protocols enabled staff to be safe and prevent transmission of infection while providing patients necessary care.

### Dental Care Via Telehealth

Prior to COVID-19, CHCNC was not using teledentistry. However, it became apparent with clinic closure, limited reopening, and reduced dental staffing, that a more technological approach to providing dental services would be advantageous for patients and staff. In July 2020, a new dentist began to advocate for the use of asynchronous teledentistry. After 2 months of planning, CHCNC implemented a teledentistry program in September. The care began with a dental hygienist doing a virtual screening and triage of patients; that information would be sent to the dentist for diagnosis and treatment planning. For cases with urgent dental needs the dental hygienist would contact the dentist directly to ensure that the patient received more rapid care.

Dental staff at CHCNC have determined that even after reopening they will continue to utilize teledentistry for some screening activities since it was a successful tool, especially for triage. Providers encountered some limitations with accurate diagnosis so there is a prevailing preference for an in-person visit, particularly for more complex patients. However, since the health center is still understaffed for dental services, teledentistry continues to be a valuable means to address patient needs virtually when appropriate.

### Burnout and Resilience

The COVID-19 pandemic resulted in instances of both burnout and resilience among the staff at CHCNC. Staff exhibited energy and positivity when working with patients. There was an obvious boost in morale over the past year. Dental staff were able to come together and effect sustainable change and positive outcomes for their patients during very difficult times. In contrast, staff also experienced frustration with a high volume of patients but a lack of adequate capacity to support and treat them. However, these frustrations were overshadowed by the successes with patient treatment. One common source of anxiety and frustration for the staff at CHCNC during the first year of the COVID-19 pandemic was the lack of childcare. This impacted the workforce resulting in some dental assistants leaving CHCNC even after the dental centers reopened for patient services.



1. Las Vegas

## Future Smiles

### Background

Future Smiles (FS) is a nonprofit community dental organization founded by a dental hygienist to serve children in metropolitan Las Vegas, Nevada. FS works with youth and families and their support systems in southern Nevada to improve oral health and well-being. In the 13 years since its founding as a mobile dental program, FS has provided care to more than 170,000 young people in the Clark County Schools, one of the largest school districts in the nation. Between 2009-2022, the organization's mobile services expanded to include more schools, currently about 60, and a full-service dental clinic staffed by a dentist, dental hygienists, and dental assistants.

The school-based dental clinic, Nevada Women's Philanthropy Dental Wellness Center at the Elaine P. Wynn Elementary School campus, is the first of its kind in Nevada, a school-based dental center providing a full menu of restorative services. The mobile teams at FS manage a school sealant program at Title 1 elementary, middle, and high schools. Dental hygienists and dental assistants provide students who have parental consent with screenings, fluoride varnish, and sealants. In addition, FS has a case management program for children identified as needing more extensive dental work. Case managers help children and their families find a dentist to address restorative needs. Since the beginning of the FS program, 70% of children with tooth decay and an identified need for more extensive dental services were able to complete a treatment plan in a dental home.

### COVID-19 Response

The unprecedented challenges of the COVID-19 pandemic required management at FS to build a plan to meet enduring need for services with sufficient infection control protocols to protect the children and the staff. During the first wave of COVID-19 in March 2020, the organization's immediate response was to close both the fixed dental clinic and the mobile dental programs; the latter was obviated by the closure of schools. The organization felt it important to support staff during closure by avoiding furloughs, so staff were told to find volunteer opportunities within their communities in place of their work. Some staff also continued to work at FS conducting inventories, rearranging space, checking in with patients, ordering supplies, and preparing oral health goodie bags for distribution at local food drives and other community events. Staff were simultaneously dealing with the personal ramifications of the COVID-19 pandemic. Some worked from home and others were redeployed to various clerical duties such as charting at the dental

center. As the period of shutdown continued, it became necessary to furlough some of the mobile dental team because schools remained closed. However, most staff eventually returned to the payroll with little overall attrition for the organization.

Once allowed to reopen, FS did so slowly, operating only part time. Patient safety was of the utmost importance so rigorous protocols were developed to manage infection control. The clinic introduced new policies around mask management, health screenings, and vaccination mandates for employees. A Ring doorbell was installed and a one-way traffic pattern was introduced. Prescreening was conducted by telephone prior to the office visit. When possible, parents remained outside in their cars while children were treated. A decision was made to only provide nonaerosol generating procedures; the types of sealants used on patients were changed to meet this criterion. Air purifiers were installed throughout the clinic. Time between appointments was lengthened to meet infection control standards.

Once schools reopened in August 2021, the mobile team was able to return to the community. The mobile team worked together to create safety protocols for services in schools. The team now uses different sealant material, GC America's Fugii Triage glass ionomer. Resin sealants were used prior to COVID-19. Glass ionomer is applied and cured without aerosol, and takes less time to set. In addition, the team restructured instrument sterilization and stopped using nonessential items such as bib-clips saving time and money for the program.

### Dental Care Via Teledentistry

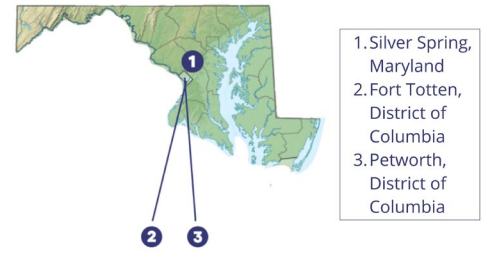
Stay-at-home orders and health system closures during the COVID-19 pandemic forced many health care providers to rethink care provision and to introduce innovative ways to reach patients. FS embraced the opportunity to use teledentistry by partnering with Liberty Dental to work with parents in a fluoride varnish program. Liberty Dental provided an interface for scheduling appointments and video calls. The expected process required that staff would contact a parent for consent to participate. Staff would then mail a fluoride varnish kit to the family and schedule a teledentistry call. During the teledentistry call, the dental provider would walk the parent through the steps of applying fluoride while also addressing any other dental concerns. Unfortunately, the program did not work as well as expected; often parents would forget the appointment, cancel, or schedule an in person visit to a dentist. Once the fixed dental clinic reopened, FS discontinued the program.

### Burnout and Resilience

The COVID-19 pandemic has had lasting impact on the health care workforce. FS was successful in providing a workplace that supported the emotional and physical needs of their staff by creating clear lines of communication and being empathetic to particular personal circumstances. The staff is relatively small in number and was able to be supportive of each other. One major stressor for the FS workforce was creating a consistent workflow to keep staff busy while balancing the need for effective infection control. Staff was

concerned about infection and spread of the virus. FS addressed these challenges by creating a flexible schedule that allowed staff to rotate in and out of the clinic, giving staff equitable time working during lockdown and reopening as well as accommodating staff if they became sick or had needs such as childcare.





## Mary's Center

### Background

Mary's Center (MC) is a FQHC with sites in Maryland and the District of Columbia (DC). MC was founded in 1988 by a registered nurse with concerns about immigrant women, particularly those fleeing Central America, and their abilities to access prenatal care in the DC area. With funding from the mayor, she established a prenatal clinic in the basement of a building in the Adams Morgan neighborhood in DC. Over time, the clinic outgrew this space and, in 1994, moved to another building in the same neighborhood, which still houses the administrative offices of this FQHC. MC was granted FQHC status in 2005. In 2021, MC provided health, dental, behavioral health, education, and support services to 65,000 patients; 75% of patients were Medicaid beneficiaries and 12% were uninsured. Consistent with its early mission, MC continues to serve immigrant communities as well as other low-income local residents. Currently about 70% of the patient population identify as Hispanic.

Over the 30 years since its founding, MC has grown into a full-service health provider for a diverse population offering care in 5 health center sites employing approximately 700 people systemwide. The health center is guided by an integrated and interdisciplinary approach to care, driven by the belief that to improve the lives of its patient populations it not only needs to provide health care services but also education and social support services.

The dental program provides general and specialty dental care in 3 dental centers and in a mobile dental bus, the "cruiser," which operates 2 days a week. The FQHC has a pediatric dental suite in its Silver Spring, Maryland location. Currently there are 3 dentists and 5 dental hygienists serving the community.

### COVID-19 Response

During the initial months of COVID-19 in early 2020, MC limited access to its dental clinic to patients needing emergent or urgent care and ceased operations of its mobile program. As the dental clinics were not providing routine services, staff was redeployed to other areas of the FQHC, including the medical clinics. Dental hygienists and dental assistants helped with screening patients and with COVID-19 testing.

The dental centers reopened carefully providing routine preventive care, limited exams, and diagnostic visits. The number of scheduled visits to the centers was reduced from pre-pandemic levels to comply with social distancing advisories and to keep both patients and staff safe from exposure to COVID-19. The dental center implemented several safety measures including using air purifiers, re-spacing waiting rooms

to enable social distancing, using PPE including disposable masks and gowns, and requiring clinicians to use face shields. When the mobile program reopened, it served only adult patients. The mobile dental van had not yet resumed services at schools.

At the time of the interview, the number of patients in the dental centers had returned to pre-pandemic levels.

### Dental Care Via Teledentistry

During the months of restricted access to dental services, MC began a teledentistry program, mainly by telephone, to screen patients, triage their dental problems, and identify patients who needed emergent or urgent services in person at a dental center. Prior to COVID-19, dental clinicians at MC had not used teledentistry. Teledental services continue to be an option for patients but many prefer in-person visits.

### Burnout and Resilience

During the COVID-19 pandemic, MC staff experienced symptoms of burnout that were caused by the numerous stressors pursuant to COVID-19 as well as shortages in the workforce to address the urgent needs of patients. Clinicians were often providing care with less support staff in the various clinics which resulted in more work and ultimately, stress for the clinicians. Overall, clinical staff experienced stress due to limited capacity coupled with the need to treat more severe oral health problems due to lack of preventative care over the prolonged period of the COVID-19 pandemic and the higher volume of patients needing more extensive care.



## Petaluma Health Center

### Background

Petaluma Health Center (PHC) is a FQHC located in Southern Sonoma County about 30 minutes north of San Francisco, California. The FQHC operates 3 health center sites with satellite clinics at a homeless shelter and a junior college, 2 school-based health centers, and a mobile medical and dental program. PHC offers an array of health services including primary medicine, pediatrics, women's health, general and specialty dentistry, behavioral health, optometry, chiropractic medicine, and ancillary services. PHC began providing dental services 17 years ago and now offers dental care at all sites except the homeless shelter and the junior college. Their dental program serves approximately 11,000 patients annually. Dental services are provided by 11 full-time dentists with multiple dental support staff. The dental clinics are open to all but there is a general focus on patients from birth to age 20, pregnant women, and patients with diabetes. PHC has a dental assistant training program. Entry-level interns interested in a career in oral health are recruited from the community and trained through a combination of academic and hands-on clinical modules. Students learn and work with staff and patients in an environment that is diverse and equitable. The dental clinic is open to patients regardless of insurance status; the FQHC offers a sliding fee scale.

### COVID-19 Response

During the initial months of the COVID-19 pandemic, PHC shuttered its largest site but continued to provide urgent and emergent care services at its Petaluma location. During this time, the oral health team worked hard to support the community and the staff. Initially, in the early months of 2020, the Petaluma dental clinic was staffed by a single dentist and 2 assistants; eventually 2 and occasionally 3 dentists provided emergent services in that location. This was a significant reduction in workforce compared to normal operations. Clinicians treated only one patient per hour. The staff in the dental clinic rotated to allow for equitable worktime for all. Other dental staff were redeployed to fill gaps in other areas of the health center. For example, dental assistants sanitized equipment, performed infection control measures, and screened patients entering the building.

During this period, the oral health team implemented new and more extensive safety protocols to ensure safe care for patients and staff. These included telephone screenings of patients for COVID-19 symptoms 2 days prior to the appointment, immediate screening at the time of the visit, and follow-up contact 2 days after the visit. These strictly enforced protocols included temperature checks and rapid tests for patients

as well as staff. In addition to infection control measures involving PPE, the dental centers implemented engineering controls including HEPA and UV light filtration. Dental center staff also worked with the organization's architect and a mechanical engineer to increase the per hour rate of air exchange to ensure correct air flow. Other engineering controls included use of extra-oral suction during aerosol generating procedures. Clinical protocols were reviewed to minimize aerosol generating procedures resulting in a renewed focus on minimally invasive services.

The PHC dental staff were concerned about their patient community and realized they needed to devise alternative means of delivering care until the threat of COVID-19 was more contained. The first method for communicating with patients was through synchronous teledentistry using live video. Clinicians followed these teledentistry visits with car dentistry for young children in need of further services. Parents would arrive at the health center with their child and remain in the car. A dentist and dental assistant who were stationed in a tent outside the health center would provide clinical services for the child in the car seat including cleaning teeth, application of silver diamine fluoride, fluoride varnish, or protective restorations. This proved to be a safe and effective way of seeing patients.

Eventually PHC's health and dental centers were able to slowly reopen to more patients. PHC has seen an increase in patient demand due to an increase in dental decay from service delays. They are booking appointments 3 to 4 months ahead. During the COVID-19 pandemic, most of the dental staff remained with PHC. Some staff had familial concerns and took voluntary absences or furloughs as needed. Some front office staff who were hired during the COVID-19 pandemic left employment voluntarily, but the clinical staff remained relatively intact. Unfortunately, the vacancies that were created by staff departures have been difficult to fill. This is not a unique problem for the dental program; the health center is experiencing recruitment problems as well.

### Dental Care Via Teledentistry

Teledentistry was an alternative method of care delivery that proved valuable during the most difficult months of COVID-19. The dental team used the Webex platform to conduct emergency screenings and to provide care for very young children, from birth to age 3. Staff used a template of standard questions to interview parents during these virtual visits asking about home care, bedtime routines, snacks, etc. Each appointment lasted approximately an hour in order to comply with acceptable standards. Patients and parents were asked to take photographs of the oral cavity and transmit them to the health center prior to the appointment. The dental center sent fluoride varnish kits to the homes of children who were scheduled for a teledentistry visit so that parents could apply the fluoride while they were on the video call with the dentist and dental assistant.

Key staff from the PHC dental clinics reported positive feedback from both providers and patients about teledentistry. Providers commented that the virtual platform was effective when appointments in the clinics were unavailable; they were able to provide dental education and treatment for adult patients with simple

diagnoses. The use of teledentistry after reopening is limited by dental assistant staff vacancies but the dental centers expect to continue use of the modality going forward.

### Burnout and Resilience

While the impact of COVID-19 changed affected staff, a survey of PHC's workforce showed that many were appreciative of not being furloughed and of having a safe working environment due to the strict infection control protocols. The FQHC created a wellness program which included a massage therapist for staff as well as scheduled hikes for staff to connect with each other outside work. A California naturalist accompanied the hikers and taught nature journaling as a way to combat burnout and practice mindfulness by connecting with nature.



## Ravenswood Family Health Network

### Background

Ravenswood Family Health Network (RFHN) is a FQHC with 5 clinic locations in the East Bay Area south of San Francisco. The FQHC operates in both San Mateo and Santa Clara Counties. RHFN began providing primary medicine services 20 years ago and now offers a comprehensive portfolio of health services including family and adult medicine, pediatrics, women’s health, general and specialty dentistry, behavioral and mental health, optometry, podiatry, chiropractic medicine, and ancillary services such as pharmacy and laboratory. In 2021, RFHN served 20,689 patients; 90% of patients were from low-income groups, 93.1% identified as a racial or ethnic minority, 63% were enrolled in a public insurance program, and 27% were uninsured.

RHFN began offering dental services more than 12 years ago in East Palo Alto. Dental services comprise all aspects of general dentistry for children and adults as well as those with special health care needs and specialty services including dental treatment under general anesthesia. RFHN also runs a school-based program offering preventive dental services and oral health education at preschools, community centers, parent-child co-ops, and elementary schools. The dental workforce has 6 full-time equivalent dentists, 3 part-time specialists, 2 dental hygienists, 19 dental assistants, 6 front desk staff, and 2 program assistants. The dental program provides mobile/portable dental services in 19 preschools in the catchment area. In February 2022, RHFN began staffing a mobile dental van with a dentist and dental assistant that travels to the other health center sites to provide dental services to patients at those sites.

### COVID-19 Response

In the early months of 2020 when shutdown of all nonemergency health services was advised, RFHN closed to all nonurgent patient visits at the dental clinic. The clinic leadership worked diligently to keep staff safe and utilize teledentistry to triage patients before they were seen in the clinic for emergency dental services. In addition, the clinic piloted using teledentistry to conduct dental preventive exams during medical visits and provide oral health education to parents. The directors and administrators also worked on a comprehensive plan to comply with the Centers for Disease Control and Prevention (CDC) recommendations for infection control and safely provide services when reopening was possible. The dental clinic was re-engineered to improve air exchanges and clinic schedules were created to utilize closed operatories for aerosolized procedures. All patients were screened for symptoms of COVID-19 and staff was trained on the

new disinfection protocols. While the implementation of new infection control guidelines and scheduling templates resulted in reopening the clinics with reduced access, staff constantly looked at ways to increase productivity and meet the needs of the patients. In addition, the clinic continued to utilize teledentistry to triage patients and ensure that patients who needed an in-person visit with the dentist were able to access services.

Staff at RFHN became increasingly aware of the importance of the health center to their patients and felt a need to support the community in any way they could. Dental staff worked with schools to distribute dental hygiene bags to families and hygiene packets to children, and in the pharmacy and central supply to support clinic operations during the initial months of shutdown.

While the dental clinic was operating at reduced capacity providing only emergency services, some staff were redeployed to different roles throughout RFHN. These roles varied but all were designed to support the network. Tasks included ensuring the medical building was stocked with PPE and screening patients for COVID-19. While staff remained fully employed, after the end of the shelter-in-place order, some left of their own volition creating vacancies that have been difficult to fill.

Throughout the COVID-19 pandemic the dental team providing virtual dental home services at partner schools was unable to go into schools until schools reopened and were ready to have visitors on campus. Services at the schools started in 2021. In order to be safe and comply with infection control protocols, the mobile team only visits a single site each day and has had to adapt to the school's regulations. This has been challenging since there is high demand for services from several agencies.

### Dental Care Via Telehealth

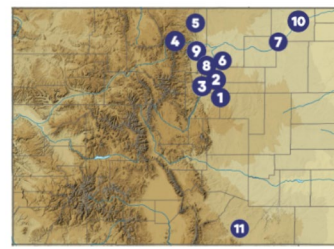
Prior to COVID-19, RFHN had established a virtual dental home for its young patients using asynchronous teledentistry. This positioned the dental team to use their experience and skills to expand the program very quickly to include synchronous teledentistry for a broader range of patients during the COVID-19 pandemic. When a patient was scheduled for a teledentistry visit, they were asked to take intraoral photos and send them to the clinic. During the virtual visit, the patient and provider would discuss the dental problem, determine treatment urgency, and create a plan of care, which would include an in-person visit when necessary.

Some clinicians were unsure of their level of comfort with teledentistry and some were skeptical about the effectiveness and accuracy of such a visit, especially in the beginning. Overtime, they became more accepting of teledentistry as many found that diagnosis on a virtual platform was as accurate as that from teledentistry, especially if the patient was already established with RFHN. There was less certainty about new patients. The biggest challenge to implementation and widespread use was Medicaid reimbursement. Despite that issue, RFHN is optimistic about utilizing teledentistry and possibly expanding its use in the dental center in the near future.

## Burnout and Resilience

The onset of COVID-19 created instantaneous shifts in how and to whom care was delivered. These unexpected changes and challenges were a source of obvious stress to the workforce at RFHN. Executive staff worked very hard to avoid cutting work hours or furloughing staff. Working from home was allowed when feasible and emergency sick leave was available to those who needed it. The dental workforce had concerns about infection from aerosols and surface contamination. Directors and managers worked hard to respect the views and feelings of its workforce and simultaneously worked to create policy and procedure backed by science and fact. Overall, having clear and open dialogue between administration and the workforce fostered a healthy environment that allowed for everyone to feel heard, respected, and safe.





1. Aurora
2. Brighton
3. Commerce City
4. Estes Park
5. Fort Collins
6. Fort Lupton
7. Fort Morgan
8. Frederick
9. Longmont
10. Sterling
11. Trinidad

## Salud Family Health

### Background

Salud Family Health (Salud) is a FQHC providing a full range of health services for more than 65,000 patients annually. Salud began in 1970 as a migrant health center supporting farmworkers living and working near Fort Lupton, Colorado. Over the past 53 years, Salud has continued its legacy of supporting underserved communities and has grown to include 13 health centers; 12 located in northeastern Colorado and 1 in the southeastern part of the state. In addition, Salud has a mobile health unit serving seasonal workers and refugee populations. Health services include primary medicine, pediatrics, behavioral health, dental services, and pharmacy. The patient population is mainly low income and Medicaid eligible and is comprised of local residents, migrant families, and immigrant and refugee populations. Many of the more than 600 staff at the FQHC are bilingual.

Salud began offering dental services in 1972; it now offers dental services for children and adults in 11 health center sites. Dental services include a broad scope of general dentistry including patient education, prevention, pediatrics, restorations, root canals, dental prosthetics, and oral surgery. The dental program is staffed by 20 dentists (including 2 pediatric dentists) and 22 dental hygienists. Salud also hosts numerous dental students from 3 dental schools and hosts 6 dental residents in an Advanced Education in General Dentistry (AEGD) program in its dental clinics. Salud provides sealants and fluoride varnish to children in 95 schools, Head Start programs, and after school programs in 11 counties.

### COVID-19 Response

During the COVID-19 pandemic, staff at Salud worked hard to ensure that staff and patients were safe. Safety protocols were heightened to enhance infection controls. Staff used more PPE and N95 masks. Dental staff eliminated aerosol generating procedures and did not begin using them again until autumn 2020.

After the state-mandated stay-at-home order in April 2020, 3 of the dental clinics remained open to patients for emergency services only. Salud redeployed staff to serve in roles other than those they traditionally filled. For instance, some dental hygienists answered phones, responded to questions, triaged patients, and transported medications from the pharmacy to patients. Unfortunately, Salud was forced to furlough roughly 130 of its dental staff during the most difficult months of COVID-19 due to the state severely limiting the dental services that could be provided. Salud's payroll for their dental department approximates \$2,000,000

per month which was unsustainable during the state's stay-at-home order. Salud employs more than 500 people so it was unable to participate in the Federal Payroll Protection Program. By June 2020, most of the dental clinics were able to reopen and offer routine dental services. The remaining clinics opened in July 2020. By August 2020, about 90% of the dental staff returned to work to provide routine care for patients. Some dentists and dental hygienists departed the organization during this time; the dental hygiene positions were the most difficult to fill.

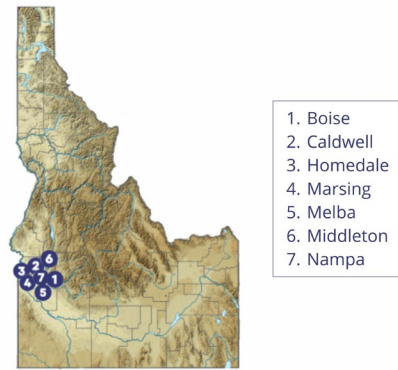
## Dental Care Via Telehealth

Salud implemented asynchronous teledentistry services in 2017 through the Virtual Dental Home model. This model utilized a hygienist acquiring patient assessments and imaging offsite with 2 full-time dentists providing remote diagnostic evaluations. The teledentistry program was 1 of 5 funded with a grant from the Caring for Colorado's SMILES Project to provide teledentistry services for children in 7 rural schools. In the early months of COVID-19, it became apparent that Salud's teledentistry practice had a wider application for more patients in a synchronous format.

The ability to have direct communication between patient and clinician was satisfying; providers were content with the interface with patients. Patients were happy to have their dental questions and concerns addressed from the convenience of their home. There were some barriers to the use of teledentistry including a lack of understanding among some patients of how to use the technology, issues with Internet access especially in rural areas, and some provider concerns about providing a diagnosis based on photographs with no physical examination or current dental radiographs. While asynchronous teledentistry continues at Salud, once patients were able to return to in-person care, the utilization of synchronous teledentistry declined.

## Burnout and Resilience

COVID-19 had an impact on the staff's resilience and feelings of burnout due to the increased stress of seeing patients during the COVID-19 pandemic and working in nontraditional roles to support the clinical team. The staff who were working felt additional pressure because they were assuming more responsibilities to cover for staff who were out for childcare or for those who had contracted or were exposed to COVID-19. Morale decreased among staff due to the necessary furloughs when only emergency dental procedures were allowed by the state. The administration was aware of these many challenges. As a benefit, they provided a third party for staff to talk with when they had a professional or personal problem.



## Terry Reilly Health Services

### Background

Terry Reilly Health Services (TRHS) began in 1971 as a small volunteer health and social service clinic for migrant farmworkers in rural Idaho. Headquartered in Nampa, Idaho, the site of its original clinic, TRHS has grown over the last 50 years to be among the largest FHQCs in Idaho. TRHS offers medical, dental, and behavioral health services to all persons regardless of insurance coverage or ability to pay. In 2020, staff treated approximately 34,000 patients across 9 counties; 10,000 patients received dental services. In that year, 37% of patients were uninsured, 33% had Medicaid benefits, and 13% were Medicare beneficiaries.

TRHS provides dental services in 9 locations in 7 cities of Idaho. Those services include general dentistry, restorative care, extractions, root canals, and minor oral surgeries. The organization employs 12 dentists, 10 dental hygienists, and other staff including a dental team on its mobile dental van. The mobile van, which has 2 fully equipped dental operatories, began operating in 2021 in rural locations throughout the catchment area. In addition, TRHS recently added a wheelchair tilting device to its Canyon Dental Center to make it possible for those using a wheelchair to remain in their chair while receiving dental services.

### COVID-19 Response

During the COVID-19 pandemic, TRHS remained open, shifting from providing routine elective services to offering only urgent and emergency medical and dental care. The dental program never fully closed or furloughed workers. Staff was redeployed to provide other nondental services within the health centers such as contacting patients and providing COVID-19 screenings. Over time, as infection rates receded and other providers in Idaho reinitiated elective procedures, the dental centers gradually reopened and returned to full capacity.

### Dental Care Via Telehealth

Dental staff at TRHS attempted to build a teledentistry program for patients during the period of limited in-person services at the dental centers. However, patients were not as receptive to virtual care as the dental team had hoped limiting the number of successful teledentistry visits. Staff had mixed reactions to the modality. Some reported that it provided a positive first exposure to dental services for new patients,

alleviating anxiety among some before their first in-person visit. Others reported that they did not enjoy teledentistry as a means to counsel or treat patients. The dental team is now committed to transitioning services back to the clinics and to the mobile dental vans. They do not expect to continue to use teledentistry for patient services.

### Burnout and Resilience

Staff at TRHS were impacted by COVID-19, reporting feelings of fear and uncertainty. The COVID-19 pandemic exacerbated existing stressors. The key issues reported by staff included a lack of childcare and a lack of consistent protocols for use of PPE. Organizational administration was aware of the stress and made an effort to provide support for its workforce by scheduling classes on burnout and stress management with a focus on well-being. They hoped that this would mitigate some of the feelings of burnout and help the staff to become more resilient. Extensive investments were also made to procure adequate PPE equipment and supplies, with the intent to minimize disruption and maximize safety.



## Whitney Young Health

### Background

Founded in 1971 in Albany, New York, the Whitney M. Young Jr. Health Center (WYH) has been providing services in its community for more than 50 years. In 2020, almost 16,000 HRSA-defined primary care patients were served by this FQHC, either at the main health center site or in its satellite locations in Troy and Watervliet, New York. WYH also served more than 10,000 additional people in its service area in 2020 providing COVID-19 screening and testing; special supplemental nutrition program for women, infants, and children (WIC) services; and other public health-oriented services. In addition, primary medicine services are provided to the general public through 2 Whitney on Wheels mobile van units and 5 school-based health centers which bring care to children and adolescents in the area.

In spring 2022, WYH opened their Swinburne Health Center in Albany offering pediatric, women's health, and WIC services. Overall, the FQHC provides primary medical care, women's health, pediatrics, WIC, HIV/AIDS & Hepatitis C services, pharmacy, on-site laboratory, behavioral health, addiction treatment services, dental, podiatry, and vision services to a variety of patient communities. In addition, Health Home Care Coordination is offered to Medicaid members with complex health care needs such as mental health issues, substance use disorders, HIV/AIDS, and/or multiple chronic conditions to help them access community-based services that address physical, social, and emotional needs. WYH's patients speak approximately 39 different languages; 64% are Medicaid eligible, 10% are uninsured, and 12% are Medicare beneficiaries.

In 2020, the dental team treated more than 5,300 patients in the WYH dental center, which is located adjacent to the main clinic. In addition, members of the dental team provided preventive services for approximately 3,000 children through its Seal A Smile program in more than 65 schools and Head Start programs in Albany and multiple nearby counties. The dental team consists of 2 dentists (with another dentist starting in the near future), 2 dental hygienists, and 3 dental assistants.

### COVID-19 Response

WYH remained partially open throughout the COVID-19 pandemic providing emergency services for its patients and the general public who lost access to dental care due to dental office closures in the area. The dental team was well prepared to cope with the vagaries of the virus due to their long experience with infection control protocols for dental procedures. Their expertise was useful to the wider health center when administration and clinicians were developing infection control protocols to be used systemwide. Staff

were required to perform daily COVID-19 testing at home and temperature checks upon arrival at work. Patients were required to complete a survey about symptoms and to have their temperatures checked. WYH did not permit visitors; patients were allowed a companion if the patient was a minor or required an aide.

The New York State Department of Health required that school-based health and oral health programs close so WYH dental services in schools ceased. Closure occurred in March 2020; the school programs did not reopen until April 2021.

Mask use was mandatory for patients and staff and appointments were spaced to avoid waiting. During the COVID-19 pandemic and especially during closure, established patients and others in the community were grateful that WYH was offering emergency dental services to anyone who needed them. WYH served many privately insured patients who were unable to access their private dental providers. WYH also served as a crucial site for COVID-19 testing and ultimately, for vaccination.

As the months of COVID-19 progressed, some patients on the phone or at the center became frustrated with the rigorous protocols, longer wait times for appointments, the lack of walk-in appointments for emergencies, and the overall limitations due to COVID-19. The health center responded to the problem by eventually posting signs encouraging patience during the difficult COVID-19 pandemic and by providing staff with de-escalation training. The physical space was also changed. Seats were removed from the waiting room to allow for social distancing and to limit the number of people in waiting areas.

During a time of increased demand, WYH was limited by reduced capacity due to staffing shortages. WYH experienced staff attrition during the COVID-19 pandemic. Some staff left of their own volition, others retired, and some were furloughed. WYH had to permanently close one of their dental clinical sites and temporarily close their Troy location. Recruitment efforts were expanded beyond the use of WYH's on-staff talent acquisition specialist and partnerships with workforce recruiting firms were established. However, replacing staff proved quite difficult; neither in-house nor contracted recruiters were successful in finding high quality, dependable candidates. There was a lack of applicants. Some who were scheduled for interviews never showed and others who were hired never came to work. The absence of in-person job fairs also complicated recruitment efforts. The dental team had a 30% vacancy rate at the time of our interview.

Another problem related to COVID-19 was the price of PPE. As demand increased and supply was strained, PPE became very expensive. The dental team began using reusable gowns which were laundered for repeat use.

### [Dental Care Via Telehealth](#)

The dental team only utilized teledentistry on occasion during the COVID-19 pandemic. WYH has considered opportunities for using teledentistry to streamline select dental referral processes, but this project has been placed on hold due to other more pressing projects and emerging workflow needs.

## Burnout and Resilience

The COVID-19 pandemic has proved difficult for WYH staff. The potential for burnout increased with staff's concerns related to fear of infection. The stress was further exacerbated by increased agitation and aggressive behaviors among some patients. One strategy implemented by the WYH dental team to counter the stress was to hold morning huddles to express gratitude toward each other.

The organization's management team has worked hard to open clear lines of communication to allow staff to voice their concerns and opinions, as well as to provide suggestions to prevent staff burnout, promote job satisfaction, and create job safety. The positive outcomes from this effort included a staff-wide de-escalation training session and a poster campaign across all clinical sites encouraging patience from clients/visitors towards WYH staff and reinforcing WYH's "Zero Tolerance" policy and expectation for mutual respect.

Twice, during the height of the COVID-19 pandemic, the WYH's Board of Directors approved a staff-wide appreciation bonus equal to a week's salary for most employees to acknowledge that continuing to serve patients during this trying time was difficult. WYH also made an effort to celebrate milestones and national appreciation weeks, host complimentary holiday breakfasts and photo contests, and conduct raffles for free tickets for shows at the Capital Repertory Theater to raise morale among the workforce. Finally, at the end of each year WYH thanks its staff by providing each person with \$50 to spend on WYH-branded apparel and merchandise.







# APPENDIX B

## APPENDIX B: INTERVIEW PROTOCOL

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### Case Studies of Safety-net Organizations to Understand the Impacts of the COVID-19 Pandemic on Delivery of Patient Care, Use of Teledentistry and Workforce Recruitment and Retention

Conducted by:

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#### Background

This case study is being conducted to identify the special challenges experienced by safety-net dental providers as a result of the COVID-19 pandemic. This study will evaluate the impacts of COVID-19 on the decision to close facilities, on the ability of safety-net providers to offer dental clinical services for emergency and acute needs, on adaptations such as use of teledentistry to address patient demand, and on the impacts on operations within the organization. Researchers will also ask about the immediate and long-term impacts of the COVID-19 pandemic on burnout, attrition and early retirement among the clinical oral health workforce.

The research is conducted by a team of researchers at the Oral Health Workforce Research Center (OHWRC) at the Center for Health Workforce Studies at the University at Albany. The work is funded by the National Center for Health Workforce Analysis in the US Health Resources and Services Administration (HRSA).

This interview is voluntary and, with your consent, will take approximately 30 minutes to 45 minutes to complete. If this interview is conducted in a group, it will take approximately 1 hour to complete. Please tell us at any point if you wish to or must discontinue this interview. Although the following questions are designed to guide the interview process, only some of the questions may be asked depending on the time allotted. A report on the interviews will be compiled when all interviews are complete.

The final reports for this case study will provide no information that could be specifically linked to an individual. Any personal information provided during the interview will be confidential. The name of your organization and its location will be listed in the report to provide information about the geographic and organizational diversity of organizations participating in the research. The various reports will include a series of briefs specifically describing oral health service delivery in each of the organizations participating in the project. Summary chapters will discuss common themes from the interviews and describe novel or innovative solutions to the problems presented by the pandemic.

Do you have any questions or concerns about this interview before we begin to talk?

If you have any questions about this interview at any time, please contact either Theekshana Fernando or Ellen O'Malley.

## Case Study Questions About the Organization's Response to the COVID-19 Pandemic

### Module A: Introductory Questions

1. Please describe this organization, its history and organizational evolution.
2. What is your current role in the organization? Has your role at the organization evolved since you joined the organization?
3. Please describe the types and numbers of dental clinicians and assistive dental professionals in the organization. Does your organization offer specialty dental services?
4. Are there special populations served by this organization that have limited access to oral health services? What are the barriers to oral health services for these populations?

### Module B: COVID-19 Effects on Safety-net

5. During the initial months of the pandemic (March to May, 2020), was the organization able to offer any health, oral health, or mental/behavioral health services to patients? If the organization was closed for a time, when did it re-open? How was the reopening of routine dental services for patients staged? Were oral health services resumed on a separate timeline from primary health services?
6. Was oral health staff furloughed or redeployed during the initial months of the pandemic? If dental staff was redeployed, please describe the services or tasks assigned to them? How did this shift in functional area affect staff?
7. Have you experienced issues with recruitment, retention and early retirement of oral health staff during the COVID-19 pandemic? How have you addressed vacancies to ensure the organization has sufficient oral health workforce to meet current and emergent needs of patients?
8. What is your assessment of the impact of COVID-19 on patients at this organization? How severely were patients affected by the difficulties with COVID-19 (eg, essential workers, unemployed)?

9. Has the COVID-19 pandemic necessitated a reconfiguration of your dental organization? How has that affected your responsibilities? What initiatives have mitigated risks for patients and providers in the organization?
10. Were oral health services impacted differently than primary care services? Please describe. Has demand for oral health services returned to pre-pandemic levels? If not, why not?
11. Do you offer mobile/portable dental services? Please describe the settings in which these programs operate. How were these services impacted by COVID-19?
12. How has the COVID-19 pandemic impacted the cost of operations at your organization? Did you receive supplementary federal funding to help with the cost of PPE and maintaining workforce?

### **Module C: Effects on Teledentistry Services**

13. Prior to the COVID-19 pandemic, did your organization use teledentistry to provide patient care? If so, what technologies were used? Did your organization bill any dental insurance for teledentistry activities? If not, how were teledentistry services funded?
14. Did COVID-19 impact the adoption or expansion of teledentistry services by your organization? Please elaborate.
15. What are the benefits of using teledentistry? Please describe patient and provider satisfaction or dissatisfaction with these services.
16. Are there any barriers that affect your organization's ability to adopt or expand teledentistry since COVID-19?
17. Does your organization have any plans to continue using teledentistry? Please describe the targeted patients and services that would use teledentistry.

### **Module D: Oral Health Workforce Burnout and Resilience**

18. There has been much discussion about burnout and stress within the health care workforce as a result of the demands of providing clinical services during a pandemic. In your opinion, has this been an issue for the workforce at this organization?
19. Has one type of worker or profession been more affected by these issues than another? Have any staff chosen to leave their jobs because of pandemic related concerns or stresses?
20. Can you identify the most often cited stressors for the staff (eg, childcare concerns, transmissibility of the virus)? Has the level of stress and anxiety decreased as more knowledge is gained about the disease and as community supports and services (eg, daycare, schools) have reopened?
21. Has the pandemic impacted the way in which clinicians interact or interface with patients? How has this affected patients and providers?
22. What, if any, strategies did the organization employ to help staff address the emotional challenges of the pandemic? Are there any employee assistance programs, or activities focused on addressing anxiety and stress among the staff?

23. Are there particular efforts to help staff remain engaged and motivated at work (eg, team-level interventions, bonuses/paid time off, scheduling flexibility)?
24. Before we end this interview, is there any additional information relevant to this study that you would like to share?

*Thank you for sharing your time and offering your insights to our project work.*





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As deputy director of OHWRC, Ms. Langelier assists the Director in preparation of all research projects and reports and in the OHWRC's dissemination activities. Ms. Langelier has served as a project manager at CHWS for 2 decades, where she has been responsible for supervising staff and coordinating of all aspects of project workflow. During her tenure, Ms. Langelier has been lead staff or the principal investigator on numerous research projects about the allied health and oral health workforce.



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