2015

Case Studies of 8 Federally Qualified Health Centers: Strategies to Integrate Oral Health with Primary Care

OHWRC
Oral Health Workforce Research Center

Center for Health Workforce Studies
School of Public Health
University at Albany, State University of New York

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September 2015

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PREFACE

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 research project to understand the barriers and facilitators to integration of oral health services with primary health care delivery in federally qualified health centers (FQHCs) across the United States. A secondary objective was to understand employment by FQHCs of a variety of novel oral health workforce to enable better access to oral health services in their delivery systems. This report describes the fi ndings from case studies conducted for the project.

This report was prepared for OHWRC by Margaret Langelier, Jean Moore, Bridget Baker, and Elizabeth Mertz, with layout design by Leanne Keough. OHWRC is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number U81HP27843, a Cooperative Agreement for a Regional Center for Health Workforce Studies, in the amount of $436,600. This information or content and conclusions are those of OHWRC and should not be constructed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the U.S. government.

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 research center uniquely focused 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, or SUNY.

September 2015

ACKNOWLEDGMENTS

Special appreciation is extended to the leadership and staff at the 8 FQHCs that hosted these case studies. The authors are indebted to the executive and administrative staff, the medical and oral health professionals, the social support workers, and others who gave their time and signifi cant insight to the discussion of oral health service delivery integrated into primary care services and to the use of oral health workforce teams and innovative workforce models to increase access to oral health services for patients of the clinics and for others in their respective communities.

The authors also wish to acknowledge the Bureau of Health Workforce for the funding that supported this work.

Suggested Citation:

Langelier M, Moore J, Baker BK, Mertz E. *Case Studies of 8 Federally Qualified Health Centers: Strategies to Integrate Oral Health with Primary Care*. Rensselaer, NY: Center for Health Workforce Studies, School of Public Health, SUNY Albany; September 2015.

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Executive Summary

BACKGROUND

The Oral Health Workforce Research Center (OHWRC) at the Center for Health Workforce Studies, University at Albany, New York, School of Public Health, completed a research project that included case studies of federally qualified health centers (FQHCs) across the United States to understand how these health centers integrate primary care and oral health care services and to also describe the use of new or alternative oral health workforce models to better achieve the objectives of increased access and improved oral health outcomes for their patient populations.

Access to oral health services is limited especially for underserved populations that receive primary care services from safety net providers. As the medical home for many people who lack access to oral health services, FQHCs are well positioned to also provide a dental home for their patients. The hypotheses of this research were:

- FQHCs are uniquely structured to enable service integration across service areas and are likely to integrate oral health with primary health care services.
- Integrated electronic health records (EHRs) in FQHCs enable continuity of care, patient-centric services, and administrative transparency for patients.
- FQHCs are able to effectively utilize innovative oral health workforce models to extend access to services because many of these models are designed to meet the needs of the underserved.

While the value of integrated health services delivery is generally acknowledged, efforts to integrate are confronted with structural barriers that confound integration. The separation of dentistry and medicine in the larger health care delivery system is an important barrier to integration that is often cited as contributing to oral health disparities.[1] FQHCs are structurally integrated organizations that deliver primary care, behavioral health, oral health, and ancillary services, including pharmacy, for their patients. FQHCs provide examples not only of the opportunities for and benefits from integrated care delivery but also of the difficulties inherent in changing the existing professional siloes in care delivery systems that impede integration.

This research study was qualitative and used a case study methodology. Between February and July 2015 researchers at OHWRC completed case studies at 8 FQHCs headquartered or operating satellite clinics in 9 states to understand selected workforce and team configurations to deliver oral health services. The purposes of the study were to identify the most effective workforce models used by FQHCs to provide oral health services to patients, including their roles and functions, to describe the delivery of oral health

services, and to identify barriers and facilitators of integrating primary care and oral health services.

The organizations included for the case studies were selected based on one or more of the following criteria, including that the FQHC:

- Used team-based approaches to provide oral health services
- Implemented policies to support oral health assessments of patients in primary care clinics and routine referrals to the FQHC dental clinic
- Used technology to improve access to oral health services (eg, integrated EHRs and teledentistry)
- Employed new oral health workforce models to expand access to oral health services (eg, the community dental health coordinator)

COMMON THEMES

Although there were many differences among the FQHCs in patient populations and practical strategies for delivering oral health services, there were also many commonalities. Themes drawn from the case studies about delivery of oral health services in FQHCs included:

Oral health service delivery that is designed to meet local need is the most effective way of improving access and utilization of oral health services by the local population.

FQHCs provide material evidence that locally designed strategies to improve oral health access are the most effective. Case study participants discussed the necessity of accurately identifying deficits in the local health or oral health care delivery systems in order not to duplicate services already being provided and of appropriately tailoring the services offered to meet the specific needs and attributes of the population. Local populations differed substantially in the communities served by the FQHCs in the case studies. One common characteristic was that many of the people served by the health centers were from lower socioeconomic groups; otherwise, patient populations varied by location.

Demand for oral health services is high in FQHCs, while the oral health literacy of patients is relatively low.

Another common finding was that demand for emergency oral health services among at-risk populations was high and a direct indicator of a lack of population oral health literacy. One clinic executive commented on the necessity of changing the perception among some patients that the FQHC was an emergency dental clinic instead of a dental home. The oral health team and others in the clinic were making concerted efforts to educate patients about the need for periodic preventive visits to avoid further dental crisis. Informants recognized the value of building patient recognition of the importance of having a dental home.

FQHCs employed a variety of strategies to integrate oral health and primary care service delivery.

Strategies to achieve integration of primary care and oral health included:

- Using the EHR bi-directionally to exchange information and make referrals
- Requiring that all patients receiving services in the dental clinic of the FQHC also be primary care patients at the clinic

- Routinely scheduling dental hygienists to provide oral health services during periodic well-child pediatric visits
- Engaging primary care clinicians in the FQHC to provide oral health screening and referral services
- Enabling dentists at the FQHC to refer to primary care providers at the health centers
- Embedding oral health services in school-based health clinics managed by the FQHC
- Embedding a dental hygienist in the off-site primary care practices affiliated with the FQHC to provide oral health preventive and educational services

Informants stressed that co-location of services in FQHCs is not equivalent to integration but it is a facilitator of integrated service delivery. FQHCs are ideally structured to provide patient-centered services using an array of multidisciplinary providers to improve overall health outcomes. The co-location of dental care with the medical clinics provided many benefits in terms of assessment and referral for care.

FQHCs generally recognized that technology was a facilitator of integration of primary care and oral health, but some health centers had resource limitations that prohibited full engagement with available or emerging technologies to improve care transparency.

FQHCs with integrated electronic health records clearly demonstrated the benefits of using IT to enable patient care. FQHCs were effectively using their comprehensive EHRs as a tool to integrate primary health and oral health care service, to enable quality and transparency in service delivery, and to improve patient satisfaction and engagement. Integrated EHRs:

- facilitated bi-directional information exchange and referral within clinics,
- aided consultations with other professionals in the FQHC in real time,
- improved efficiency and quality in care delivery,
- permitted interface with patients in community settings through patient portals,
- connected clinicians with other health care providers in the community who were treating mutual patients, and
- enabled monitoring of outcomes from selected clinical interventions.

Not all FQHCs in the case studies had developed or utilized an integrated EHR. IT systems linking patient records pose financial challenges for some health centers with fewer financial resources. Providers at

these FQHCs expressed concern over duplication of administrative and clinical documentation when a clinic's electronic record systems did not interface.

Finding local, state, federal, and other funding to support the cost of building infrastructure and delivering oral health services is critical to sustain the contributions of FQHCs to improvements in access to oral health services.

Several FQHCs discussed the challenges of meeting the need for oral health services in their patient population with the limited resources available to support service delivery. Only a small portion of the funding received by FQHCs as clinic grantees is for oral health service delivery. Building dental clinic infrastructure is expensive because each dental operatory is a surgical suite. FQHCs have mainly relied on grants, including expansion grants from HRSA and private philanthropy, to build or expand dental clinics. Grant funds in the Affordable Care Act (ACA) for improvements in dental infrastructure were awarded to several of the clinics in the case studies to build or expand their dental clinics.

FQHCs also emphasized the importance of having a good understanding of public insurance benefits and reimbursement systems to appropriately structure and align dental services with coverage guidelines in public programs. FQHCs sought to provide services not included in Medicaid benefits in a cost-effective manner so that patients with limited resources could afford to consider dental options other than those supported through Medicaid.

FQHCs commonly used team-based approaches to delivering oral health services and were successful in using teams to meet patient demand for dental care.

An important common finding was that FQHCs effectively used team-based approaches to manage service delivery. Researchers observed and informants offered that workforce in FQHCs are often mission driven and committed to improving the health of their patient populations. Oral health professionals and others in the clinics realized that building effective teams to deliver care was essential to efficient use of limited resources and to increase overall capacity to meet high demand for services.

Oral health care teams were variously constituted in FQHCs, depending on the workforce available in each state. At the core were traditional providers including both general dentists and, when available, specialty dentists, DAs (working in basic and extended functions), and DHs (including some who had qualified for extended functions or expanded practice). The core dental team was further extended to involve other professionals practicing in the clinic, including dental residents and student externs, part-time dentists from the community, and affiliated DHs and DAs working in settings outside the clinic including school-based or -linked oral health programs.

FQHCs used existing oral health workforce in innovative ways and also engaged with new oral health workforce models to improve care delivery.

The care model at FQHCs is grounded in common clinical goals that are actualized through the efforts of dedicated staff in the clinics, by resource teams in the community including patient navigators, by care management processes within the system, and by accessible integrated EHR systems. FQHCs are well equipped to effect warm hand-offs between clinical disciplines by focusing on the patient's need for comprehensive care. FQHCs benefit from the opportunities to use innovative workforce to reach local populations both in their clinics and in the local community. Workforce innovation allows for a variety of service delivery configurations and also permits existing oral health workforce to gain new competencies and to combine skill sets to better address the needs of their patient populations.

The oral health workforce strategies in FQHCs in the case studies included some or all of the following:

- Providing dental residents and dental student externs with clinical rotations at the FQHC;
- Encouraging private-practice dentists from the community to work on a part-time basis at the dental clinic;
- Recruiting dentists through state and federal loan repayment programs;
- Enabling DAs and DHs to obtain further training that supports expanded capabilities; and/or
- Employing new categories of oral health professionals recognized by the state in which the FQHC was located.

CONCLUSIONS

FQHCs are structured to provide a comprehensive array of health services in an integrated ambulatory care setting. As a result, FQHCs have the potential to seamlessly provide primary care, oral health, behavioral health, and ancillary health services in their health centers. FQHCs employ team-based service delivery models that are culturally competent and of high quality.

FQHCs benefit from the opportunities to use innovative workforce models to reach local populations both in their clinics and in the local community. Workforce innovation allows for a variety of service delivery configurations and also permits existing oral health workforce to gain new competencies and skill sets to better address the needs of their patient populations. Staff at FQHCs are familiar with public insurance benefits, eligibility qualifications, and community resources such as transportation that facilitate care delivery. Clinicians in FQHCs acknowledge and respond to the health literacy challenges of many patients by providing appropriate patient education during clinical encounters.

Integrated EHRs facilitate bi-directional information exchange and referral within clinics. EHRs support clinical consultations at the FQHC in real time, to improve efficiency and quality in care delivery, to interface with patients in community settings through patient portals, to connect with external health care providers who are treating mutual patients, and to monitor outcomes from clinical interventions. Not all FQHCs have developed or utilize an integrated EHR. IT systems linking patient records pose financial challenges for some health centers with more restrictive budgets.

FQHCs in the case studies recognized their important contributions to oral health service delivery in their local communities and also acknowledged that engagement with clinical and social service providers in the larger community was important to the success of improvements in population oral health in their catchment areas. FQHCs worked well with local hospital systems, other neighborhood clinics, and clinicians in private practices, especially specialty providers, in planning for and implementing programs to improve the health and oral health of their patients. Participation in regional and state health information exchanges and in referral networks that included community clinicians was tangible evidence of the recognition that clinics are partners in health care delivery and that community linkages are essential to meet the need of FQHC patients for access to a comprehensive care delivery system.

Technical Report

INTRODUCTION

OHWRC at the University at Albany, New York, School of Public Health, completed a research project that included 8 case studies of federally qualified health centers (FQHCs) across the United States to understand how they integrate primary care and oral health care services and to also describe the use of new or alternative oral health workforce models to better achieve the objectives of increased access and improved oral health outcomes for their patient populations.

Access to oral health services is limited especially for underserved populations that receive primary care services from safety net providers. As the medical home for many people who lack access to oral health services, FQHCs are well positioned to also provide a dental home for their patients. FQHCs provide a comprehensive menu of services under the same organizational umbrella, and in many centers the primary care, behavioral health, and oral health clinics are co-located or located within short distances to facilitate patients' access to these services. The hypotheses of this research were:

- FQHCs are uniquely structured to enable service integration across service areas and are likely to integrate oral health with primary health care services.
- Integrated electronic health records (EHRs) in FQHCs enable continuity of care, patient-centric services, and administrative transparency for patients.
- FQHCs are able to effectively utilize innovative oral health workforce models to extend access to services because many of these models are designed to meet the needs of the underserved.

This research study was qualitative and used a case study methodology. Case studies were conducted between February and July 2015. Research staff visited 8 FQHCs operating in 9 states with some variation in scopes of practice for auxiliary oral health professionals.

The 3 major objectives of this research study were to:

- Identify effective approaches to integrating primary care and oral health services delivery in FQHCs
- Describe both the deployment of innovative oral health workforce and the configurations of oral health teams in FQHC dental clinics

- Characterize useful technologies that enable service integration, including electronic dental and medical records (the EHR), telehealth modalities, and mobile and portable equipment.

This report presents a summary of common themes as well as a discussion of differences among FQHCs. Appendix A of this report includes summary briefs about each of the 8 FQHCs that participated in the study. The interview protocol appears in Appendix B.

BACKGROUND

Since publication of the U.S. Surgeon General's reports, *Oral Health in America* in 2000 and the *National Call to Action to Promote Oral Health* in 2003, efforts to reduce the significant oral health disparities among at-risk populations have increased. There are many reasons for the disparities in utilization of oral health services and poorer oral health outcomes in some populations, including uneven access to dental services, lack of resources to pay for needed care, and low oral health literacy.

The importance of integrating oral health services with medical services is an enduring theme highlighted both by the Surgeon General and in many subsequent publications recommending strategies to improve population oral health. The isolation of dentistry from medicine in the health care delivery system is a structural barrier to integration that is often cited as contributing to oral health disparities.[1] There is widespread acceptance of the assessment that dental and medical services are discrete services, a misconception that perpetuates the siloes in which oral health and medical care are delivered. Most oral health services are provided in the private offices of dentists who are not affiliated with other health care providers in their respective communities. However, FQHCs, which mainly serve at-risk populations, provide primary medical services and oral health services under the same administrative umbrella, and in many centers all health, oral health, and behavioral health services are co-located in the same or adjacent buildings.

FQHCs are safety net providers that receive federal support, operate under federal guidelines, and serve many of the populations at greatest risk for poor oral health outcomes. Section 330 of the Public Health Service Act mandates that FQHCs offer a comprehensive array of health services, including pediatric dental care and preventive dental services for all patients.[2] FQHCs may provide oral health services through referral to community dental providers in the local area or in-house, using oral health professionals on staff to serve patients. In 2008, 80% of the 1,080 FQHCs provided on-site dental care.[3] HRSA has made a significant investment to support FQHCs in their efforts to provide oral health services by awarding $55 million in oral health expansion grants since 2001. In 2013 FQHCs provided on-site dental services to 4.4 million people across the United States. Although the federal mandate only requires clinics to provide preventive services for adults, 1.3 million people received restorative dental services and more than 1 million received emergency or oral surgery services in an FQHC in that year.[5]

METHODS

Between February and July 2015 researchers at OHWRC at the Center for Health Workforce Studies at the University at Albany, School of Public Health, completed case studies at 8 FQHCs headquartered or operating satellite clinics in 9 states to understand selected workforce and team configurations to deliver oral health services. The purpose of the study was to identify the most effective workforce models used by FQHCs to provide oral health services to patients, including their roles and functions, to describe the structural configurations in place to deliver oral health care, and to identify barriers and facilitators of integrating primary care and oral health services.

The FQHCs for this project were selected based on 1 or more of the following criteria, including that the FQHC:

The FQHCs that participated in the case studies were:

- *Ammonoosuc Community Health Services, Inc.* in Littleton, New Hampshire
- *Blackstone Valley Community Health Care* in Pawtucket, Rhode Island
- *Lake Superior Community Health Center* in Duluth, Minnesota and Superior, Wisconsin
- *NYU Langone Lutheran Family Health Centers* in Brooklyn, New York
- *Penobscot Community Health Care* in Bangor, Maine
- *Ravenswood Family Health Center* in East Palo Alto, California
- *United Community & Family Services* in Norwich, Connecticut
- *Wayne Memorial Community Health Centers* in Honesdale, Pennsylvania

1. Used team-based approaches to provide oral health services
2. Implemented policies to support oral health assessments of patients in primary care clinics and routine referrals to the FQHC dental clinic
3. Used technology to improve access to oral health services (eg, integrated EHRs and teledentistry)
4. Employed new oral health workforce models to expand access to oral health services (eg, the community dental health coordinator)

Because the number of case studies was small, findings from this qualitative work may not be generalizable. Although geographic locations, patient populations, and local health care needs varied by FQHC, recurrent themes identified from the research suggested underlying commonalities in FQHCs drawn from a strong commitment to serving high-need populations in their communities.

The 8 case studies used individual and group interviews of administrative and clinical staff at each FQHC. Informants included medical and oral health professionals, pharmacists, behavioral health specialists, information technology (IT) staff, operations and financial management, and executive leadership. The interviews lasted between 30 minutes and several hours, depending on the number of participants in each group. Although a protocol of suggested questions was provided to all informants, not all questions were asked at each interview. Only those relevant to the practice or interest of the informants were discussed. For instance, questions about school-based oral health programs were not relevant to every FQHC and were omitted when appropriate. A copy of the interview protocol is contained in Appendix B of this report.

FINDINGS

Common Themes From the Case Studies

Although there were many differences among the FQHCs in patient populations and practical strategies for delivering oral health services, there were also many commonalities. Themes drawn from the case studies about delivery of oral health services in FQHCs are described below in discussions that focus on the similarities and differences in approaches to oral health service delivery among the health clinics. The briefs in Appendix A of this report profiling each of the FQHCs in the study further describe their unique environments and singular approaches to delivering oral health services in their communities.

Theme 1.
Oral health service delivery that is designed to meet local need is the most effective way of improving access and utilization of oral health services by the local population.

FQHCs provide material evidence that locally designed strategies to improve oral health access are the most effective. Case study participants discussed the necessity of accurately identifying deficits in the local health or oral health care delivery systems in order not to duplicate services already being provided and of appropriately tailoring the services offered to meet the specific needs and attributes of the local population.

Local populations differed substantially in the communities served by the FQHCs in the case studies. One common characteristic was that many of the people served by the health centers were from lower socioeconomic groups; otherwise, patient populations varied by location. In rural Littleton, New Hampshire, where the community was mainly white and older, delivering oral health care services presented different challenges than those encountered in densely populated Pawtucket, Rhode Island, or East Palo Alto, California. In Littleton, providing care to an aging rural population with transportation and literacy challenges was a major concern. In Pawtucket, language and culture were primary considerations when designing service delivery, so employing a culturally competent workforce was a priority. In East Palo Alto, where a very high percentage of the patient population was Hispanic, staffing with bilingual oral health professionals was essential.

A single FQHC may need to address population differences within its affiliated clinics. As an example, the Lake Superior Community Health Center provided oral health services in both Duluth, Minnesota, and nearby Superior, Wisconsin. Informants discussed the impact of the particular environments and of the divergent characteristics of patients from these different communities on delivery of oral health services.

In Duluth, which is a manufacturing town with good public transportation, there was a problem with poverty and a growing homeless population. The implications of substance abuse on oral health in the population was also an emerging concern. The oral health clinic in Duluth was in high demand for emergency services, but also had a high no-show rate for routine scheduled care.

In the Superior clinic, which is located a short drive across a bordering bridge, the patients were mainly from rural areas of Wisconsin and were older on average than the patients in the Duluth clinic. The overriding challenges for the population in that area were distances from home to the clinic and the ability of rural patients to arrange transportation to make multiple visits to complete an oral health treatment plan.

An example of the unique local need in communities served by FQHCs was demonstrated at United Community and Family Services (UCFS), an FQHC in Norwich, Connecticut. The health center is situated near several casinos owned by tribal groups, and gambling addictions were more prevalent in the local community than in other locations visited for these case studies. Therefore, the FQHC offered behavioral health counseling in a discretely located gambling addiction center. The entrance to the center was not visible from the main access street and was separated from the public entrances to the primary health and dental clinic to ensure confidentiality and encourage utilization.

Theme 2.
Demand for oral health services is high in FQHCs, while the oral health literacy of patients is relatively low.

Another common finding was that demand for emergency oral health services among at-risk populations was high and a direct indicator of a lack of population oral health literacy. One clinic executive commented on the necessity of changing the perception among some patients that the FQHC was an emergency dental clinic instead of a dental home. The oral health team and others in the clinic were making concerted efforts to educate patients about the need for periodic preventive visits to avoid further dental crisis. Informants recognized the importance of increasing oral health literacy and building patient recognition of the importance of having a dental home.

FQHC informants attributed ongoing demand from the local community for emergency dental services in their clinics to the fact that many patients do not access routine oral health services as recommended. Study participants commented on the resulting daily struggle to accommodate emergency walk-in patients in the clinics while also serving scheduled patients on a timely basis. One important downstream impact was that oral health professionals in the FQHCs were constantly rearranging schedules and shifting patients to maximize capacity and generate efficiencies. Workforce flexibility was essential under these demanding circumstances.

Many of the FQHCs in the case studies had established referral mechanisms with local hospitals to permit patients seeking care for dental pain and infection in hospital emergency departments (EDs) to obtain services at the FQHCs. This care-seeking behavior was attributed to a lack of literacy about oral health because EDs are not equipped to treat the source of dental complaints. EDs generally only provide medication to address infection and sometimes pain. According to informants, patients need a better understanding of the oral health delivery system and of appropriate care-seeking behavior.

It is important to change the perception among some patients receiving care at the FQHC that the dental clinic is an emergency clinic instead of a dental home.

An additional indicator of lack of oral health literacy in FQHC patient populations was the high no-show rate, especially for dental hygiene appointments for prophylactic services. All of the FQHCs in the study had found it necessary to establish no-show policies to reconcile high demand for services from the community with empty chairs as a result of patients not keeping scheduled appointments. Some clinics regularly double-booked appointments in anticipation of patients not arriving as scheduled. The ease with which patients disregarded preventive and prophylactic services manifested a lack of recognition of their importance to obtaining and maintaining good oral health.

Informants at the FQHCs demonstrated an understanding of the oral health literacy challenges of the underserved. Clinicians were providing practical oral health education at every encounter with relevant topics selected based on patient need. For example, a young mother might be told about the negative implications of sharing food with children or a person who smoked about the risk of oral cancers. Professionals acknowledged that it was important to meet the patients where they "were at" and to deliver education in an accepting, nonjudgmental, and culturally competent manner.

Theme 3.
FQHCs employ a variety of strategies to integrate oral health and primary care service delivery.

Many FQHCs provide services in large health center settings in which primary care, oral health, behavioral health, pharmacy, and other services are provided. One informant cautioned that co-location of services is not the same as service integration, but that co-location provides opportunities for cross-disciplinary care delivery that is unique to FQHCs. Another case study participant commented that the co-location of dental care with the medical clinic provided innumerable benefits in terms of assessment and referral for care.

Informants stressed that co-location of services is not equivalent to integration but it is a facilitator of integrated service delivery. FQHCs are ideally structured to provide patient-centric services using an array of multidisciplinary providers to improve overall health outcomes. The co-location of dental care with the medical clinic provides innumerable benefits in terms of assessment and referral for care.

Although all FQHCs in the case studies recognized the value of integrating care to create a comprehensive health home for their patients, the tactics selected to achieve integration varied by clinic and by the technologic tools available in each. FQHCs were strategic when designing processes to achieve integration. FQHCs engaged clinical and administrative staff to provide inputs about how best to enable care integration without significant interruption of existing workflows in clinical practices. For instance, 1 FQHC now scheduled a dental hygienist (DH) to provide fluoride varnish applications during periodic well child visits for immunizations at the pediatric clinic. The DH also provided oral health education to the parent. The DH was scheduled through the common appointment scheduling module in the EHR so that the patient did not have to wait for the DH to be summoned from the dental clinic and the appointment was integrated into the DH's daily schedule.

Certain practices in FQHCs clearly supported integration of primary care and oral health, including using new patient health information forms that contained questions about history of dental disease and access to a dental home. Some of the FQHCs in the study required that all dental patients must also be patients in the primary care clinic, thereby increasing the ability of clinical providers to coordinate care across disciplines and build a patient-centered health home.

The integrated EHR was viewed as a necessary tool to enable service integration, reduce redundancies in clinical services, and facilitate referrals. It was also an important tool to demonstrate outcomes from integration efforts. The EHR enabled FQHC staff to identify whether patients had completed referrals to the dental clinic and were receiving regular services.

An integrated EHR facilitated the efforts of oral health and primary care clinicians to effect bidirectional communication and referral. Dentists were able to monitor patient medical histories or to determine the advisability of performing certain dental procedures based on the patient's medical presentation at the time of the scheduled service. The EHR allowed for immediate communication and referral back to the primary care physician for treatment and management of a concerning condition. Primary care clinicians were also able to perform oral health screenings and immediately effect referrals to the oral health clinics using the fully integrated EHR in the FQHC.

Table 1. Strategies Used to Achieve Integration of Primary Care and Oral Health

Using the EHR bidirectionally to exchange information and effect referrals
Requiring that all patients receiving services in the dental clinic at the FQHC also be primary care patients at the clinic
Including oral health services from dental hygienists in the services scheduled for periodic pediatric visits
Engaging primary care clinicians in the FQHC to provide oral health screening and referral services
Embedding oral health services in school-based health clinics managed by the FQHC
Embedding a dental hygienist in the off-site primary care practices affiliated with the FQHC to provide oral health preventive and educational services

Use of an innovative oral health workforce was another strategy to improve care integration. Wayne Memorial Community Health Centers employed a DH who was qualified as both a public health dental hygiene practitioner (PHDHP) and a community dental health coordinator (CDHC). In Pennsylvania the PHDHP is permitted to perform dental hygiene services in schools, correctional facilities, health care facilities, nursing care facilities, FQHCs, nonprofit health clinics, and other public settings without prior authorization or assignment of a dentist. The CDHC is trained in a community health paradigm to provide oral health and disease prevention education using motivational interviewing techniques and to provide patient navigation services.

The PHDHP/CDHC employed by Wayne Memorial spent a portion of her work time in the off-site offices of the primary care practices affiliated with the FQHC. The PHDHP/CDHC used portable equipment, including a portable x-ray machine, to assess patients' oral health needs and to provide preventive services. She also offered education and navigation services to the dental clinic at the main health center for those primary care patients who did not have a preexisting dental home. Clinicians in the medical offices performed preliminary oral health assessments and booked patients for preventive services on the days when the PHDHP/CDHC was scheduled to be at the primary care practice. The PHDHP/CDHC treated both adults and children in these medical settings and successfully referred new patients to the dental clinic at the main health center for more extensive treatment procedures.

There were notable examples discussed during the case study visits of the variety of opportunities for integrating oral and primary health services in FQHCs. At Blackstone Valley Community Health Care (BVCHC) in Rhode Island, the oral health team participated in a research study in the dental clinic that screened patients who were 45 years and older for diabetes risk. Study participants were dental patients who were not previously aware of any diabetic status. Consenting patients received oral health screening, including a periodontal exam, and a finger prick hemoglobin test to measure HbA1c. Any

Patients who were identified in the dental clinic at Blackstone Valley Community Health Care (BVCHC) as at risk for diabetes through a periodontal screening exam and a finger prick blood test were more likely to follow up with their primary care physician at Blackstone than were patients found to be at risk for diabetes in non-BVCHC dental practices that also participated in the diabetes risk assessment study. Seventy-nine percent of patients at the FQHC who were identified as at risk for diabetes followed up with their clinic physician to obtain a diagnosis, while only 21.5% of patients in non-BVCHC dental practices did so.

patient whose blood test result indicated an HbA1c level of 5.7% or greater was referred to his or her primary care physician at BVCHC for further testing. The larger research study also included patients receiving dental services in non-BVCHC dental practices who were similarly screened. One finding of the research was that follow-up compliance to obtain a diagnosis among the FQHC patients at BVCHC identified as at risk for diabetes was much higher (78.8%) than among patients in the non-BVCHC dental practices in the study (21.5%). This finding suggests that integrated care delivery in the FQHC patient-centered medical home contributes to better outcomes for patients.

Certain populations, including pregnant women, are at greater risk for complications from poor oral health. Hormonal changes during pregnancy place women at greater risk for periodontal disease and other conditions, so visiting a dentist is important. Medicaid policy in most states extends health benefits, including dental benefits, to pregnant women at higher income levels than for the general population. At Ravenswood Family Health in California, a nurse midwife interviewed for the case studies indicated that protocol at the FQHC included referring all women for an oral health visit at their preexisting dental home or at the FQHC's dental clinic. At Lutheran Family Health Services in New York, the population of pregnant women was also of special concern. The dental clinic hosted a "baby shower" for pregnant patients at the obstetrical clinic to engage them with receiving dental services.

"Every woman who is pregnant gets a dental referral for a cleaning and a checkup across the board. Medicaid will pay for it. We give them a referral immediately and if they don't have a dentist, which most don't, we send them across the street to the dental clinic."

-An FQHC Informant

Theme 4.
FQHCs generally recognized that technology was a facilitator to integration of primary care and oral health, but some health centers had resource limitations that prohibited full engagement with available or emerging technologies to improve care transparency.

Electronic Health Record

Although several of the FQHCs in the case studies had an integrated EHR that permitted bi-directional information exchange and enabled seamless referral between primary care and oral health or other providers, other clinics were struggling with integrating medical and dental records. Legacy medical record systems were often not built with a clinical dental module, and crafting interfaces to legacy systems was both difficult and expensive.

Informants reflected that increases in quality of care as a result of system integration might only be incremental, making it difficult to justify the significant investment of financial resources. However, these same FQHCs also expressed concern that there were duplications and redundancies in clinical tasks and administrative and clinical documentation that occur when systems run in parallel and do not interface.

FQHCs with integrated records clearly demonstrated the benefits of using IT to enable patient care. BVCHC was an FQHC that was effectively using its comprehensive EHR as a tool to integrate primary health and oral health care service, to enable quality and transparency in service delivery, and to improve patient satisfaction and engagement. BVCHC had a fully integrated EHR system that included all clinical documentation and scheduled appointments, enabled real-time consultation with any provider in the FQHC, and archived diagnostic radiography and laboratory results. One feature of its EHR was a patient portal. In addition, the FQHC had recently instituted a smartphone application to help patients track health indicators such as weight or blood glucose levels for transmission to clinical providers in the health system for ongoing monitoring of their health conditions. BVCHC was also a primary contributor to the statewide health information exchange in Rhode Island.

Executive leadership at BVCHC indicated that technology was expensive, placing it out of reach for clinics with low profit margins. BVCHC's ability to purchase the fully integrated information system was partly due to the fact that its plan to develop an integrated EHR was at a time when the poor economy lowered demand for health record systems. Low demand increased the willingness of the vendor to accommodate the clinic's restricted budget and provide the necessary interfaces to build an integrated enterprise.

FQHCs with a fully integrated EHR discussed the benefits to patients of not having to provide a full medical history at each encounter and how access to the comprehensive patient record in real time

informed care delivery and improved the quality of care. Others discussed creative uses of the medical and dental records to identify new patients, to monitor and track patient care on a longitudinal basis, and to avoid unnecessary duplication in record keeping. In 1 dental clinic, a DH reviewed the records of patients who had delivered babies through the obstetrical clinic at the health center and at the 1-year date sent an invitation to new mothers to bring their babies to the dental clinic for their first oral health screening services.

Portable/Mobile Technology

Other kinds of technology were enabling FQHCs to increase access to services. Portable and mobile dental equipment was perhaps the most common available technology used to extend the reach of the FQHCs into their communities. Many of the FQHCs in the case studies employed DHs to provide school-linked or school-based oral health services using portable chairs, sterilizers, and x-ray equipment. These programs relied on DHs who qualified for expanded roles, including public health dental hygiene, enabling them to practice under reduced levels of dental supervision for patients who were often not patients of record at the FQHC. These DHs were not only expanding access to and utilization of preventive, prophylactic, and educational services but were also linking new patients to the sponsoring FQHC. Portable and mobile technology was being used in nursing homes, at adult day care centers, in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) sites, in off-site primary care practices, and in other public health settings where patients with limited access could be more readily engaged.

Teledentistry

Teledentistry is an emerging tool using video conferencing and computer technology to permit consultations and exchange of records and diagnostic studies among and between patients and dental professionals, especially specialty dentists, in areas where the availability of services is limited or for patients with limited access to oral health services. At the time of the case studies, the Ravenswood Family Health Center in California had partnered with the Center for Special Care Dentistry at the University of the Pacific in a statewide teledentistry pilot project called the Virtual Dental Home (VDH).[6] Goals of the project include extending the availability of dental services to children in schools and Head Start programs and to residents of nursing homes across the state.

Ravenswood engaged Head Start sites in San Mateo to deliver services to children through the VDH program. DHs and dental assistants (DAs) provided oral health screenings for enrolled children. The DHs working in the project connected with a program-affiliated dentist via technology and transmitted diagnostic x-rays and dental hygiene assessments to the dentist to enable remote diagnosis of oral disease and development of a treatment plan. The outcomes from the program included keeping healthy individuals in their communities by providing necessary prophylactic or preventive services at a site

remote from the clinic and also expediting referrals for treatment of acute care needs either to the dental home, to a community dentist, or in the case that neither was available, to the FQHC. The teledentistry program permitted children to access preventive services in schools and Head Start programs and provided those without a dental home the opportunity to establish one with the sponsoring FQHC.

Informants evaluated the partnership as beneficial for those served by the program. Over 200 young children had received early dental care and any in need of further treatment were referred for care. In addition, educators and parents, many of whom did not fully understand the implications of poor oral health status for young children, were educated on the importance of early and regular dental care.

Theme 5.
Finding local, state, federal, and other funding to support the cost of building infrastructure and delivering oral health services is critical to sustain the contributions of FQHCs to improvements in access to oral health services.

Several FQHCs discussed the challenges of meeting the need for oral health services in their patient population with the limited resources available to support service delivery. Only a small portion of the funding received by FQHCs as clinic grantees is for oral health service delivery. Building dental clinic infrastructure is expensive because each dental operatory is a surgical suite. FQHCs have mainly relied on grants, including expansion grants from HRSA and private philanthropy, to build or expand dental clinics.

Grant funds in the Affordable Care Act (ACA) for improvements in dental infrastructure were awarded to several of the clinics in the case studies to build or expand their dental clinics. Ammonoosuc Community Health Services had renovated a building adjacent to the main health center as a dental clinic with funds from the ACA and was now directly providing oral health services to FQHC patients.

Informants discussed the difficulties with financing for technology to enable care delivery, including the high costs of interfaces to integrate legacy electronic dental records with medical record systems. FQHCs also commented on the challenges of high costs for portable/mobile equipment, including sterilizers and radiography equipment, to allow for extended outreach by DHs to local communities. Many had been fortunate to receive grant or equipment awards for these purposes.

FQHCs emphasized that having a good understanding of public insurance benefits and reimbursement systems is important to appropriately structure and align dental services with coverage guidelines in public programs. This was especially important for FQHCs operating in more than 1 state, because requirements for care delivery differed. According to informants at the Lake Superior Community Health Center, which served Medicaid insured patients from both Minnesota and Wisconsin, it was important to know which Medicaid program was covering the service. All patients insured by Minnesota Medicaid are

required to see a dentist at every visit. Dental hygiene services are not covered unless a dental evaluation also accompanies the visit. Patients covered by Wisconsin Medicaid can see the DH for prophylactic services without also seeing the dentist because that program permits the DH to bill directly for services.

FQHCs sought to provide services not included in Medicaid benefits in a cost-effective manner so that patients with limited resources could afford to consider dental options other than those supported through Medicaid. In many states adult dental benefits are limited and often do not cover the cost of final tooth restoration, for instance. Coverage for dentures also varied by state Medicaid program. FQHCs were seeking ways to make dentures affordable for patients who were self-paying for this service, including finding discount providers to fabricate the dentures or purchasing equipment to permit on-site fabrication of some dental prostheses.

Theme 6.
FQHCs embraced team-based approaches to delivering oral health services and were successful in using teams to meet patient demand for dental care.

An important common finding was that FQHCs effectively use team-based approaches to manage service delivery. Researchers observed and informants offered that workforce in FQHCs are often mission driven and committed to improving the health of their patient populations. Oral health professionals and others in the clinics realize that building effective teams to deliver care is essential to efficient use of limited resources and to increase overall capacity to meet persistently high demand for services.

The care model at FQHCs is grounded in common clinical goals that are actualized through the efforts of dedicated staff in the clinics, by resource teams in the community including patient navigators, by care management processes within the system, and by accessible integrated EHR systems. FQHCs are well equipped to effect warm hand-offs between disciplines by focusing on the patient's need for comprehensive care.

The Structure of Teams

FQHCs are system driven and use administrative and clinical teams whose members vary in function and professional orientation to design and manage service delivery. FQHCs use various team configurations, including clinical teams, administrative teams, finance teams, project-specific teams, and others. Teams are often transdisciplinary and composed of employees at various levels and from different functional areas within the organization. Team accountability is structured in a matrix of organizational responsibility. The involvement of a broad complement of staff members on teams builds and reinforces staff commitment to and engagement with the overriding mission of the FQHCs.

Centralization vs Decentralization

Team-based management would suggest that planning service goals and delivery is usually a centralized function. However, although teams in FQHCs are multifocused and variously constituted, FQHCs also recognized that some decentralization was important. For instance, although integration of services was a common goal, having separate waiting rooms for specific clinics was considered essential. One FQHC spoke of the difficulties of a common waiting area for those who were ill, those receiving counseling services, and those seeking dental care. Such areas reduced confidentiality and also unnecessarily exposed patients to illness and to inconveniences including long wait times for processing intake and discharge. Decentralized waiting rooms in each clinical area were identified as ideal for both patients and providers and were also consistent with fostering the concept of a dental or primary care home.

Discipline-Specific Teams

Although FQHCs used cross disciplinary teams to coordinate service delivery, FQHCs also recognized the importance of building discipline-specific teams.

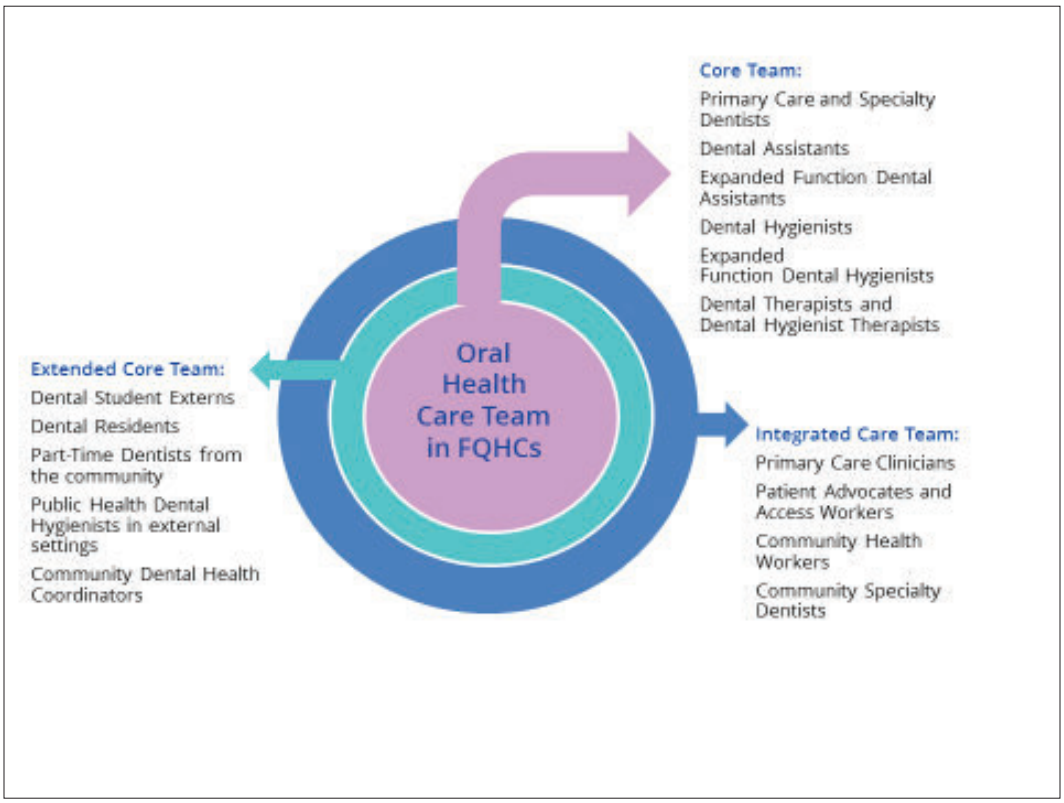
In the opinion of many, discipline-specific teams were important to:

- Shape team identity and cohesiveness within a particular clinic in the FQHC
- Encourage adoption of shared goals within a clinical area
- Build patient recognition of and familiarity with the primary health or oral health care team
- Provide the clinic with an identity as a dental or medical home
- Improve continuity of care for patients
- Build familiarity and confidence among team members with the clinical capability and skill competency of others on the team

Oral health care teams were variously constituted in FQHCs, depending on the workforce available in each state. At the core were traditional providers including both general dentists and, when available, specialty dentists, DAs (working in basic and extended functions), and DHs (including some who had qualified for extended functions or expanded practice). The core dental team was further extended to include other professionals practicing in the clinic, including dental residents and student externs, part-time dentists from the community, and affiliated DHs and DAs working in settings outside the clinic including school-based or -linked oral health programs.

The efforts of the dental team were further enhanced by the integration of other clinical, social work, and administrative staff at the FQHC providing related services, including primary care health services, oral health education, case finding, benefit qualification, and patient navigation, and by specialty dentists in both local communities and regional areas.

Figure 1. Components of an Oral Health Care Team in FQHCs



Theme 7.
FQHCs used existing oral health workforce in innovative ways and also engaged with new oral health workforce models to improve care delivery.

FQHCs discussed the challenges of recruiting and retaining a sufficient workforce to meet persistently high demand for oral health services. They also discussed the necessity of innovating workflows and task assignments on a daily basis to efficiently deliver care. FQHCs demonstrated a willingness to use the existing oral health workforce in new ways and to also engage new types of workers with expanded skill sets to increase capacity in their clinics. The configurations of oral health teams in the FQHCs varied by state in part because of differences in scope of practice rules for different oral health professionals. For example, some states allow extended or expanded scopes of practice for DHs in public health settings serving patients without established dental homes.

The oral health workforce strategies in FQHCs in the case studies included some or all of the following:

- Providing dental residents and dental student externs with clinical rotations at the FQHC
- Encouraging private-practice dentists from the community to work on a part-time basis at the dental clinic
- Recruiting dentists through state and federal loan repayment programs
- Enabling DAs and DHs to obtain further training that supports expanded capabilities
- Employing new categories of oral health professionals recognized by the state in which the FQHC was located

High demand for restorative and other treatment services affected staffing at FQHCs which varied from "typical" staffing levels in private dental practices. Private dental practices are characteristically staffed by 1 or 2 dentists employing multiple DHs and DAs. Data from the American Dental Association's (ADA) Survey of Dental Practice in 2012 about employment of personnel other than dentists showed that on average there were 1.9 DHs and 1.5 chairside DAs per dentist in primary private practice.[7]

In FQHCs the ratio of dentists to DHs, while various, was generally much lower. For example, the main dental clinic of the NYU Langone Lutheran Family Health Center was staffed by more than 100 dentists and dental residents but only 11 DHs. The disproportionate staffing was evidence of higher demand for dental treatment services than for preventive or prophylactic services in safety net organizations. Informants from Lutheran discussed that demand for emergency treatment services was so great that 1 operatory in the dental clinic was reserved at all times for dental emergencies. The dental department at Lutheran was the largest in the health center, which was another indicator of the need for dental services in the area.

At Lutheran, dental residents provided all prophylactic services for pediatric patients, which further reduced demand for DHs to work with pediatric patients in the clinic. However, DHs provided all adult prophylactic services, and adults were a major portion of the patient population.

Dental Residents and Dental Student Externs

The opportunity for dental residents and student externs to experience practice in the safety net during clinical training and externship rotations was identified as mutually beneficial to provider organizations and to the students and their educational programs. FQHC informants indicated that dental residents and fourth-year student externs, while requiring preceptorship, generally had sufficient skills to add capacity and value in the dental clinic. Students and residents were able to perform initial assessments and

diagnoses, take patient medical histories, prepare patients for treatment services, and perform procedures under the supervision of precepting dentists.

The practice experience in an FQHC exposed students and residents to the challenges of working in public health settings and to the extensive need for oral health treatment services in the safety net. In addition, residents and externs gained more experience with surgical procedures and extractions because of the high volume of procedures performed in FQHCs. The quantity and repetition of surgical procedures better prepared students for practice after graduation.

In addition, residencies and externships created opportunities for FQHCs to identify new dentists for recruitment to employment at the clinic. Many of the FQHCs in the case studies that hosted student externs and residents had been successful with recruiting new dentists from the student pool. New dentists were attracted by the loan repayment benefits available in FQHCs. And even though loan repayment required only a limited service engagement in the clinic (often 3 years), several of the FQHCs reported that they had retained dentists recruited with loan repayment benefits long after their service obligation was satisfied.

FQHC leadership and clinical dental leadership commented on the high student debt burden among new dentists that pushes many to private practice after graduation. Although many FQHCs acknowledged that they could provide competitive salaries for new dentists, over time they were unable to supply the salary increases related to productivity that accrue in private practice.

FQHC informants commented that rotations in community dental clinics had widespread impacts, 1 of which was that students gain a true appreciation for the tremendous need for oral health services in at-risk population groups. This awareness motivated some to continue to provide care to safety net patients in their private practices after graduation and others to continue to work part time in a safety net clinic in addition to their private practice.

The Department of Dental Medicine at the NYU Langone Lutheran Health System in Brooklyn, New York, managed an extensive dental residency program in advanced education in general dentistry (AEGD) and in general practice residency (GPR) that together placed more than 200 national and international dental residents in 75 community health clinics located in 28 states. Community health clinics contracted with the Lutheran residency program, which ascertained suitability of the site and the staff, based on Commission on Dental Accreditation dental residency guidelines, to host dental residents.

Besides its residency programs, Lutheran also maintained official externship agreements with 8 dental schools in various states to host dental student externs in 1 of the 6 dental clinics managed by the FQHC throughout Brooklyn. The main dental clinic was located in the NYU Lutheran Medical Center in Brooklyn,

was open 12 hours a day 5 days a week and on weekends until 5:00 PM, and was staffed by 70 dental residents and 40 mostly part-time dentists, who precepted their work. Lutheran also operated 5 satellite dental clinics within a few miles of the main clinic in densely populated Brooklyn that were partly staffed by residents and externs.

Private-Practice Dentists Working Part Time in the Safety Net

Several of the FQHCs in the case studies reported having part-time dentists on staff who had private practices in the local community or who were retired from private practice. Working part time in the safety net was a means for dentists to increase access and contribute to service delivery in the safety net without assuming the administrative burden of enrolling in Medicaid programs at their private practice.

There were several downstream effects of employing part-time dentists. Part-time dentists increased the ability of the FQHC to extend service hours and to structure full-time dental practice at the FQHC so that it mirrored private-practice work hours. FQHCs were open at least 5 days a week, with many offering some weekend or evening hours. In many cases part-time dentists provided clinics with the capacity to offer full-time clinic dentists time off and sometimes a 4-day work week. In addition, part-time dentists benefitted from work in FQHCs because malpractice insurance costs were often covered by the clinics and, if working a minimum of required hours, the dentist could qualify for employment benefits including family medical coverage.

Another reason for staffing with part-time private-practice dentists was that it allowed specialists to supply services at the FQHC on a limited basis. Several of the FQHCs reported employing an oral surgeon, an endodontist, or a pediatric dentist 1 day a week or once a month. This enabled access to dental specialists for FQHC patients. FQHCs generally agreed that it was extremely challenging to find specialty care providers willing to serve their patients. Long waits for appointments with a limited number of specialty dentists who accepted Medicaid insurance and long travel distances to obtain specialty dental services were common.

Penobscot Community Health Care (PCHC) in Bangor, Maine, was particularly successful with finding specialty dentists to provide a range of specialty services in its dental clinic. The FQHC had a prosthodontist, 2 orthodontists, and an oral surgeon on staff, some of whom were full time while others were part time. In addition, the FQHC sponsored a general practice residency program that included an endodontist, a periodontist, and an advanced general practice dentist as faculty.

Providing specialty dentistry proved to be important for PCHC's patients. The clinic began offering orthodontic dental services in 2013 with 1 orthodontist. At that time, there were 200 patients on a waiting list. At the time of the case study, PCHC had 2 orthodontists on staff and a waiting list of 500 patients. It

also had an oral surgery suite that was rebuilt 18 months prior to the case study when an oral and maxillofacial surgeon began providing services on-site. PCHC was in the process of obtaining authorization from the state to provide moderate sedation services in the oral surgery suite.

Developing the Potential of Existing Staff to Increase Efficiency and Capacity

The FQHCs in the case studies demonstrated a willingness to adopt innovative service delivery models to achieve improved outcomes. When discussing the challenges of a demanding treatment schedule, a dentist described assigning a dental student extern to triage the patient, ensure that diagnostic studies were current, and collect or review medical and medication histories. To further increase the efficiency of the visit, he would then assign a qualified DH to prepare the patient for scheduled restorative services with local anesthesia. Once he had completed the surgical cutting of the tooth, an extended function DA would help pack and carve the amalgam. These assignments maximized the ability of the dentist to meet persistently high demand for surgical and restorative services at the FQHC.

FQHCs used existing workforce creatively. At the main dental clinic of Lutheran Family Health Services, a patient care treatment coordinator was functioning as a "concierge" for assigned patients, especially for those with a history of high no-show rates for dental services. The professional in this position had been a DA for many years and also had a master's degree in education. The coordinator/concierge was bilingual and acted as a patient advocate and navigator. The coordinator would consult with the dentist about a scheduled procedure for a particular patient, talk with the patient to explain the planned services, and accompany the patient to the treatment room. This position had improved patient satisfaction with the dental clinic and had appreciably increased the rate of dental treatment plan completions at the FQHC.

FQHCs were supportive of clinical staff seeking further training and certification to enhance their skills and gain new competencies. In many of the states in which the FQHCs for the case studies were located, there were expanded practice roles and functions available to already trained oral health "auxiliaries." These expanded functions included local and nitrous oxide analgesia, restorative or orthodontic functions, and community education and case finding.

Using New Workforce Models to Improve Access to Services

Dental teams in several of the FQHCs included innovative oral health workforce enabled in a state to expand access to and capacity for oral health service delivery. The innovative oral health workforce in the FQHCs in these case studies included:

- Community dental health coordinators
- Public health dental hygienists
- Dental therapists

The CDHC was envisioned by ADA as an oral health worker with functionality similar to that of community health workers in health care programs. The CDHC is trained to provide community education about oral health, case finding, patient navigation, and patient engagement services using motivational interviewing techniques. There are currently more than 30 CDHCs educated in pilot training programs funded by ADA at universities and colleges in several states. CDHCs are practicing in Arizona, California, Montana, Minnesota, Oklahoma, Pennsylvania, Texas, and Wisconsin. Wayne Memorial Community Health Centers in Honesdale, Pennsylvania, employed a CDHC who was also a licensed DH and was additionally qualified as a PHDHP in Pennsylvania. The CDHC/PHDHP was active in the community doing oral health education at community events, schools, Head Start programs, and other settings. In addition, she was working in primary care practices affiliated with the health center providing dental hygiene assessment and prophylactic services and navigating new patients to the main dental clinic for treatment services. Her ability to work in both the community and the clinic and to link patients to services was a value-added service.

Public health dental hygiene is an increasingly common model of practice for DHs that is enabled in many states. However, the allowable tasks, the settings in which practice is permitted, and the required levels of supervision vary considerably. In some states, practice is limited to screening and education in public settings, while in others public health dental hygiene practice extends to atraumatic restorations under limited dental supervision. The model was adopted in many states to enable DHs to practice in places where patients congregate for other purposes, including schools, Head Start programs, senior day care centers, long-term care facilities, and others. Public health dental hygiene is a bridging practice that allows for provision of preventive and prophylactic services in the community while also enabling referral to a sponsoring program or dental clinic for broader dental treatment services. The model is especially attractive for populations that must rely on others for transportation to health services including children and elders, who are especially vulnerable to not receiving services because of their dependent status. Having DHs who were qualified as PHDHs in the FQHCs was useful for both in clinic and off-site services.

Dental therapists (DTs) and advanced dental therapists (ADTs) provide basic restorative services in Minnesota under the auspices of a supervising dentist. DTs must work under direct supervision, while ADTs may work under general supervision after completion of required hours of precepted practice. The ADT in Minnesota is also required to be a licensed DH, permitting the ADT to provide restorative and prophylactic services under allowable scopes of practice for dental therapy and dental hygiene.

At Lake Superior Community Health Center in Duluth, Minnesota, the DT on staff was considered to be an important complement to dentists. The DT and dentists worked closely together to complete scheduled and emergency restorative services for patients in the dental clinic where there was high demand for services. One dentist commented that having a DT on staff provided essential flexibility and permitted task shifting to enable full utilization of professional capacity.

The DT could complete simple restorations when a demanding emergency case was diverted to the dentist. The DT could regularly triage, prepare patients, and complete procedures as needed. Dental therapy is often labeled as "midlevel" practice because the skills and competencies in which DT professionals are trained allow DTs to both substitute for and supplement practice by a dentist in basic restorative therapy. Similar workforce models with different names are permitted in Alaska and Maine.

FQHCs identified multiple opportunities to effectively employ new workforce models, especially when these professionals had multiple credentials or licenses that combined several skill sets. One observation from the case studies was that the variety of possible team and workforce configurations increased when opportunities for education in new skills and competencies were available. Innovative use of these novel workforce models was 1 factor that enabled FQHCs to increase their reach into the communities of interest.

The variety of possible team and workforce configurations in an FQHC increased when opportunities for education in new skills and competencies for oral health professionals were available in a state.

DISCUSSION

Although discussions about the importance of integrated health services delivery are commonplace in health policy forums, strategies and programs to blend primary care, oral health, and behavioral health service delivery are confronted with a discipline-specific delivery system that confounds integration. The importance of integration to improvements in population health outcomes is obvious, but the barriers are numerous. FQHCs are structurally integrated organizations that deliver primary care, behavioral health, oral health, and ancillary services, including pharmacy, for their patients. FQHCs provide examples not only of the opportunities for and benefits from integrated care delivery but also of the difficulties inherent in changing the existing professional cultures in care delivery systems that impede integration.

The 3 major conclusions from this study were:

- FQHCs are uniquely positioned to provide integrated health care services that are patient centered
- FQHCs experience common problems with the oral health literacy of patients and with building sufficient capacity to meet high demand for services
- FQHCs have exceptional opportunities to engage with innovation, especially novel local workforce solutions that increase access to oral health services for underserved populations

Patients benefit when care is integrated and the likelihood of building a patient-centered health home is increased. FQHCs have particular characteristics which enable patient centric care:

- FQHCs are structured to provide a comprehensive array of health services in an integrated ambulatory care setting. As a result, FQHCs have the potential to seamlessly provide primary care, oral health, behavioral health, and ancillary health services in their health centers.
- FQHCs encourage team-based service delivery models that are culturally competent and of high quality. Clinicians in FQHCs acknowledge and respond to the health literacy challenges of many patients by providing appropriate patient education during clinical encounters.
- Integrated EHRs facilitate bi-directional information exchange and referral within clinics. EHRs support clinical consultations at the FQHC in real time, to improve efficiency and quality in care delivery, to interface with patients in community settings through patient portals, to connect with external health care providers who are treating mutual patients, and to monitor outcomes from clinical interventions. Not all FQHCs have developed or utilize an integrated

EHR. IT systems linking patient records pose financial challenges for some health centers with more restrictive budgets. Providers at some FQHCs expressed concern over duplication of administrative and clinical documentation when a clinic's electronic record systems do not interface.

- FQHCs benefit from the opportunities to use innovative workforce to reach local populations both in their clinics and in the local community. Workforce innovation allows for a variety of service delivery configurations and also permits existing oral health workforce to gain new competencies and to combine skill sets to better address the needs of their patient populations.

- Staff at FQHCs are equipped with extensive knowledge of public insurance benefits, of necessary qualifications for eligibility for other social programs, and of community resources such as transportation that facilitate care delivery and enable administrative transparency for the patients in FQHCs.

- FQHCs in the case studies recognized their important contributions to oral health service delivery in their local communities and also acknowledged that engagement with clinical and social service providers in the larger community was important to the success of improvements in population oral health in their catchment areas. FQHCs worked well with local hospital systems, other neighborhood clinics, and clinicians in private practices, especially specialty providers, in planning for and implementing programs to improve the health and oral health of their patients. Participation in regional and state health information exchanges and in referral networks that included community clinicians is tangible evidence of the recognition that clinics are partners in health care delivery and that community linkages are essential to meet the need of FQHC patients for access to a comprehensive health care delivery system.

Appendix A

The following briefs describe the individual case studies conducted in the 7 FQHCs and 1 FQHC look-alike clinic.

- ***Ammonoosuc Community Health Services, Inc.*** in Littleton, New Hampshire
- ***Blackstone Valley Community Health Care*** in Pawtucket, Rhode Island
- ***Lake Superior Community Health Center*** in Duluth, Minnesota, and Superior, Wisconsin
- ***NYU Lutheran Family Health Centers*** in Brooklyn, New York
- ***Penobscot Community Health Care*** in Bangor, Maine
- ***Ravenswood Family Health Center*** in East Palo Alto, California
- ***United Community & Family Services*** in Norwich, Connecticut
- ***Wayne Memorial Community Health Centers*** in Honesdale, Pennsylvania

Ammonoosuc Community Health Services
Littleton, New Hampshire

- Ammonoosuc Community Health Services (ACHS) provides primary care services in 5 affiliated primary care clinics. Oral health services are provided in a dental clinic adjacent to the main health center.

- The patients served by the FQHC are mostly White (98.6%), and many are adults age 65 years and over (22.0%).

- Patients mainly live in a rural 2-county area in northern New Hampshire that encompasses 26 towns with a total population of approximately 30,000 people.

- ACHS served 9,765 unique patients in 2014. Many (48.9%) were privately insured.

- ACHS is part of an Accountable Care Organization in collaboration with 3 other FQHCs and is also a Level 3 Patient-Centered Medical Home (PCMH).

Ammonoosuc Community Health Services (ACHS) was established in 1975. Its main health clinic, dental clinic, and administrative offices are located in recently renovated adjacent buildings in Littleton. Affiliated primary care clinics are in Warren, Woodsville, Franconia, and Whitefield, New Hampshire. ACHS employs approximately 135 people, including 9 family practice physicians, 1 pediatrician, 1 dentist, 7 advanced practice registered nurses, 1 physician assistant, 1 psychologist, 1 psychiatric advanced practice nurse practitioner, 2 licensed mental health counselors, 1 licensed clinical social worker, 2 pharmacists, and 1 DH.

In 2014 ACHS clinicians provided almost 36,000 medical encounters to 9,765 patients, 15.9% of whom were Medicaid insured, 20.9% were Medicare insured, 48.9% were privately insured, and 14.4% were uninsured. ACHS offers services on a sliding fee scale to income-qualified patients. In 2014 the FQHC provided over $731,000 in free medications for patients and $1.4 million in discounted health care services.

The FQHC provides a comprehensive array of health services, including primary care, prenatal care, pediatrics, women's health, behavioral health, chronic disease management, and oral health. ACHS has a 340 B pharmacy on the premises of the main clinic.

ACHS serves one-third of the population in its geographic catchment area. The population in the area is mostly white, lower income, and older on average than the population in the state and the United States. According to the 2012 census, New Hampshire was the third-oldest state in terms of median age (42 years) with only Maine (43.5 years) and Vermont (42.3 years) having older populations.[8] New Hampshire's over-65 population grew faster (8.7%) between 2010 and 2012 than in any other state. As a result, the median age in the state increased from 41.1 years to 42 years.

The FQHC is located in the northern part of Grafton County, near the Coos County border. Grafton is the second-largest county in the state and is predominately rural. Dartmouth College is located in southern Grafton County. ACHS serves a higher percentage of elderly patients than many FQHCs. Coos County has the lowest number of people and the oldest population of any county in the state, with an average of only 18 people per square mile. The population in Coos County is also less well educated and has a lower per capita income than the state population overall. ACHS is 1 of 4 FQHCs forming the North Country Health Consortium, an Accountable Care Organization with 6,191 Medicare-insured attributed lives.

Dental Services at Ammonoosuc Community Health Services

Until 2014, ACHS did not have a dental clinic to directly provide oral health services. It relied on a voucher system for patients to seek care from dentists in the local community. This program was supported by approximately $20,000 in state funding and $30,000 from local hospitals, including Cottage Hospital and Littleton Regional Hospital. This limited funding significantly restricted the number of patients and types of oral health services that could be supported.

The ACA provided opportunities for community health centers without existing clinic space, equipment, and professional workforce to directly provide oral health services to expand health center sites to include dental clinics through grant funding for construction and renovation projects.[9] ACHS received a federal grant to refurbish an existing building adjacent to the main Littleton health center as a dental clinic. The newly renovated 2,700-square-foot dental clinic contains administrative space, patient waiting rooms, a private dental consultation room equipped with digital technology, a dental laboratory, a sterilization room, and 5 operatories (3 dental and 2 dental hygiene operatories). Each operatory includes state-of-the-art x-ray equipment. The clinic opened in January 2015 and is staffed by 1 dentist and 1 DH. One full-time and 1 part-time DA also support care provision along with administrative staff.

ACHS was identified for a case study because of its potential to provide information about the implementation process for an oral health clinic. It was also selected because of a synchronous event that promised to enhance the impact of the ACHS dental clinic on workforce development for rural and underserved areas in New Hampshire. The dental clinic project at ACHS coincided with the opening of a new dental school at the University of New England in Portland, Maine. The curriculum for the new dental school is grounded in a community health education paradigm that requires all dental students to complete community-based practica and externships as part of their educational process. The new dental school was seeking community rotation sites for dental students beginning in 2106 and 2017 and contracted with ACHS as a precepting dental clinic. In addition, ACHS has agreed to provide a community clinic externship for a student from A.T. Still University in Arizona during the summer of 2015. ACHS was considering a permanent arrangement to continue to precept A.T. Still students as dental clinic capacity and utilization increases over time. Hosting student externs was viewed as a means for introducing new dentists to the benefits of working in the safety net and to the opportunities for employment in underserved areas.

Many of the current patients in the dental clinic are adults. The New Hampshire Medicaid program provides only limited dental coverage for adults and is mostly restricted to urgent treatment of dental pain and infection (mainly extractions), so publicly insured patients and those who are uninsured pay ACHS for most dental services on a sliding fee scale based on individual or family income.

Local unmet need for dental services was evidenced by the patients presenting for care during the first month of clinic operation. During the first week after opening, the dentist performed 4 surgical incision and drainage procedures for patients with badly swollen mouths. During the first month, the dentist treated 139 patients and performed 45 extractions. Seventy percent of dental services in that month were provided on a sliding fee scale, amounting to an $18,000 discount for patients.

Another manifestation of unmet need was the high number of patients presenting with dental complaints at the ED of the local hospital. The hospital tracked patients presenting at the ED from mid-October 2014 to February 2015 and found that 3.7% of all patients had a dental complaint (94 people had a primary dental complaint and 64 had a related dental complaint). In the prior fiscal year, the hospital reported 800 presentations by patients with dental complaints at an average cost of between $750 and $1,500 per ED visit.

After only 3 months in operation, demand for dental services at ACHS had increased and the clinic was fully booked with 3- to 4-week waits for an appointment. Clinic leadership recognized the emerging need to add professional staff, including an additional DH to enhance the availability of preventive and educational services and to keep wait time for appointments at a reasonable level. Dental clinic staff began noting a higher than desirable no-show rate. As a result, they implemented a process to reduce the number of patients who failed to arrive for a scheduled appointment. Clinic staff were calling patients the day before the scheduled visit to remind them of the appointment and confirm the patient's intent to come.

Informants were asked how clinic patients and others were made aware that the dental clinic was open for services. Primary care providers at the FQHC were promoting the new dental clinic to their patients during primary care visits at the health center. There had been articles in the local paper about the opening of the clinic. In addition, the FQHC was including a stuffer about the dental clinic in all billing statements to patients.

Integration of Primary Care Services, Oral Health, and Behavioral Health

Informants at ACHS commented that it was important to understand that co-location of services is not equivalent to integration, but it is a facilitator of integrated service delivery. Leadership remarked that FQHCs are ideally structured to provide patient centric services using an array of multidisciplinary providers to improve overall health outcomes. One quality of FQHCs that supports integration is that professional values are generally aligned with the organizational mission of providing comprehensive, high-quality care to patients. The care model at ACHS was grounded in common clinical goals that were actualized through the efforts of dedicated staff in the clinics, by resource teams in the community (eg,

patient navigators), by care management processes within the system, and by an accessible integrated EHR system.

ACHS functions with the direction of a matrix of clinical, administrative, and other functional teams that meet regularly to consider, establish, and evaluate a variety of cross organizational goals for patient outcomes. For example, during one clinical care team meeting at FQHC headquarters that included a multidisciplinary roster of participants, there was active discussion about building overarching oral health clinical goals to be integrated into all clinical areas of the FQHC. The opportunity to effect oral health action items was generated by the ability of primary care clinicians to now refer patients internally for oral health services. Clinical care leadership discussed the importance of the integration of primary, oral, and behavioral health services and commented on the ability for patients to receive a range of diverse health services from one or another of the co-located providers. Meeting participants discussed the importance of bidirectional referrals between dental providers and primary or behavioral health providers to enable transparent care throughout the health care system.

At the meeting, a social worker recalled a behavioral health patient who mentioned during a counseling session the need for dental services but because of an anxiety disorder had been reluctant to seek care. The social worker offered the patient graded exposure to the dental clinic. The strategy included escorting the patient through the dental clinic to familiarize him with the space and introduce him to the providers. The social worker recognized that the effort might require several visits but had a commitment to ease the patient's anxiety so that ultimately the patient would get the needed oral health services. All agreed that FQHCs were well equipped to effect warm hand-offs between disciplines by focusing on the patient's need for comprehensive care.

ACHS had a robust EHR on the GE Centricity platform that had been in place for 2 decades. The FQHC had added a compatible dental module designed by another software vendor with plug-ins to the existing platform. At the time of the case study, clinic IT and administrative staff were in the process of designing new templates and work forms within the EHR to allow seamless access to the dental and medical records and to further integrate clinical processes with existing information flows.

Blackstone Valley Community Health Care
Pawtucket, Rhode Island

- Blackstone Valley Community Health Care (BVCHC) provides primary care, behavioral health, and oral health care services. The FQHC is a Level 3 PCMH.
- In 2013 BVCHC served 13,332 unique patients, including 5,780 unique dental patients in more than 61,000 visits.
- Two-thirds (67.5%) of patients were White, 30.8% were Black, and 60.9% were Hispanic/Latino.
- More than 60% of patients speak a primary language other than English.
- In 2013 all patients were at or below 200% of the federal poverty level (FPL), with 71.9% at or below 100% FPL.
- Almost half (48.2%) of patients were insured by Medicaid or a Children's Health Insurance Program plan and 34.7% were uninsured in 2013.
- BVCHC had a fully integrated and very capable EHR to facilitate integration of services. More than 3,500 patients used the patient portal of the EHR.

Blackstone Valley Community Health Care (BVCHC) was founded in 1990 when several smaller health clinics in Pawtucket and Central Falls, Rhode Island, joined to serve local populations in need of health care services. The dental clinic at BVCHC opened in 1994, and its services and capacity expanded over time. The FQHC now requires that all dental patients also be primary care medical patients at BVCHC. Prior to this requirement, primary care clinicians in the FQHC had significant difficulty referring patients to the dental clinic because dental services were in high demand from the external community. Requiring dental patients to also be medical patients was viewed as consistent with the development of a comprehensive health home. The FQHC has attained recognition from the National Committee for Quality Assurance (NCQA) as a Level 3 PCMH.

BVCHC has primary medical clinics in both Pawtucket and Central Falls. Currently, all dental services are provided in the Pawtucket dental clinic. In 2012 the FQHC moved its dental clinic to a new building containing 12 operatories. This move coincided with the new construction of the primary care medical clinic located directly across a small side street from the dental clinic. After 3 months in the new location, the dental clinic, which is staffed by 5 dentists, 2 student dentists, 2 DHs, and numerous DAs, was fully scheduled. Dental patients, 60% of whom are adults, range in age from 1 to 93 years. The FQHC recently purchased a vacant ambulatory care clinic from a hospital in Central Falls for renovation as a dental clinic with 6 to 8 dental operatories.

Rhode Island Medicaid has an adult dental benefit that limits coverage for reparative and restorative services and provides only very limited coverage for oral surgery. Medical coverage for Medicaid enrollees in Rhode Island is now administered through managed care organization (MCO) risk plans, but most dental services remain in fee-for-service Medicaid. Medicaid-eligible children born after May 1, 2000, are an exception. These children qualify for the RIte Smiles program, which is administered by a dental benefits MCO manager. Rhode Island embraced Medicaid expansion under the ACA and raised eligibility limits to 133% FPL, with childless adults now eligible for Medicaid coverage in the state.

BVCHC receives a separate dental prospective payment system (PPS) for services to Medicaid-insured patients. The dental PPS rate is lower than the PPS for medical services. Specialty dental services are difficult to find for the Medicaid insured in the Pawtucket area. There is a pediatric dental residency program at the nearby St. Joseph's Hospital that BVCHC's patients can access, but many travel to specialists in bordering Massachusetts to obtain oral surgery or endodontic services.

The Integrated Electronic Health Record

BVCHC is well known for its use of IT to improve the quality of care delivery. In the past the FQHC had separate paper medical and dental records. In 2006 the health center was preparing to update its practice management system and recognized the need for an integrated health record system. With the help of

its vendor, BVCHC was able to build a comprehensive record system that was implemented in stages. The practice management module went live in January 2007, followed by the dental module in June and the medical module in July. In addition, the dental clinic was equipped with digital radiography that was also integrated as a component of the EHR in August 2007.

The EHR is designed with the patient management system that contains demographic information acting as the hub that bridges information contained in the separate medical and dental records. The health center is entirely paperless, and the clinical records are template driven. Clinicians can easily access any part of the clinical record. Referral coordinators and call centers can access necessary information to send appointment reminders to patients or to effect referrals between providers. There is also a secure patient portal that is accessed through any Internet-connected modality. Patients can message physicians and dentists and a triage nurse monitors and directs those communications.

At the time of the case study visit, BVCHC had recently introduced the smartphone application Health Tracker, which allows patients to track health information such as weight or blood glucose levels for eventual feedback to health care providers. The phone application had only recently been fielded, so its potential was not yet clear at the time of the fieldwork for this study.

BVCHC was the first entity to have a single sign on to Current Care, Rhode Island's statewide health information exchange, and the second in the state to submit data to the exchange. The software vendor for BVCHC ensured interoperability with external systems, enabling exchange of electronic referrals and patient health information across provider systems.

Integration of Primary Care and Oral Health Services

Informants at the FQHC provided several examples of efforts to integrate primary care and oral health care delivery at the FQHC. One illustration of the potential positive impact of integration of primary care and oral health on patient outcomes was a research study conducted by the University of Buffalo at BVCHC. Dental staff participated in a study protocol that screened patients who were 45 years and older for diabetes risk in the dental clinic. Study participants were dental patients who were not previously aware of any diabetic status. Consenting patients received oral health screening, including a periodontal exam, and a finger prick hemoglobin test to measure HbA1c. Any patient whose blood test result indicated an HbA1c level of 5.7% or greater was referred to his or her primary care physician at BVCHC for further testing. This study also included non-BVCHC patients receiving care in private dental practices. One interesting finding of the research was that follow-up compliance among the FQHC patients at BVCHC was good (78.8%), while follow-up compliance among patients in non-BVHC dental practices was poor (21.5%). This finding suggests that integrated care delivery in the FQHC patient-centered medical home enables better outcomes.

Dentists at the FQHC were aware of the implications of chronic medical conditions on oral health. Every adult receiving care in the dental clinic at BVCHC is screened for cardiovascular risk before any medication containing epinephrine (which can increase blood pressure) is administered. Dental clinic staff access the medical record whenever there is a concern about a medical issue and the patient is referred back to the primary care clinic for evaluation.

Another strategic effort to integrate oral health with primary health at the FQHC involves pediatric patients between 1 and 3 years of age. The pediatricians in the health center refer all children at age 1 or at first tooth eruption to a dentist at the dental clinic. When possible, the child is seen on the same day. The child is then scheduled every 6 months to see a dentist and DA for fluoride varnish application and parental education. This is an effective practical strategy to improve parent's oral health literacy, to identify emergent decay in a timely manner, and to enable better oral health outcomes for young children. Parents are receptive to suggested strategies to treat any identified decay including putting fluoride toothpaste on carious lesions. An important side effect of the visits is that the DAs are able to build a relationship with the toddlers over time.

Another interesting strategy to engage young families with oral health services was in place at the health center. The dental clinic coordinator regularly mined medical records to identify families who had delivered new babies within the past year and then invited the mother to bring the child into the dental clinic for a screening at 1 year of age. New parents were generally motivated to bring their children in for regular visits, which generated interest in receiving the suggested oral health services.

Since April 2012, when they were trained, primary care providers at BVCHC had been performing oral examinations during routine physicals and were referring their patients for at least an annual dental visit. Once the primary care patients were seen in the dental clinic, the patient-centered climate at the FQHC encouraged patients to come for scheduled services. As a result, the FQHC had a relatively high percentage of care plan completions compared with other similar clinics.

The FQHC made a special effort to coordinate service delivery for high-risk patients. Nurse care managers gathered "pods" of staff on a daily basis to discuss the schedule for the following day for patients identified as high risk because of their medical comorbidities and/or lack of past compliance with scheduled appointments. Community health workers (CHWs) on community health teams at the FQHC visited patients at their home, especially patients who frequented the ED or failed to show for appointments. The CHWs facilitated visits to the FQHC's dental clinic when a patient had an unmet oral health need. Dental clinic staff also communicated daily with hospital ED staff in the local area either by phone or via electronic referral to schedule patients that had presented at the ED with dental pain and infection. About 9% of daily visits to the dental clinic were for emergency services.

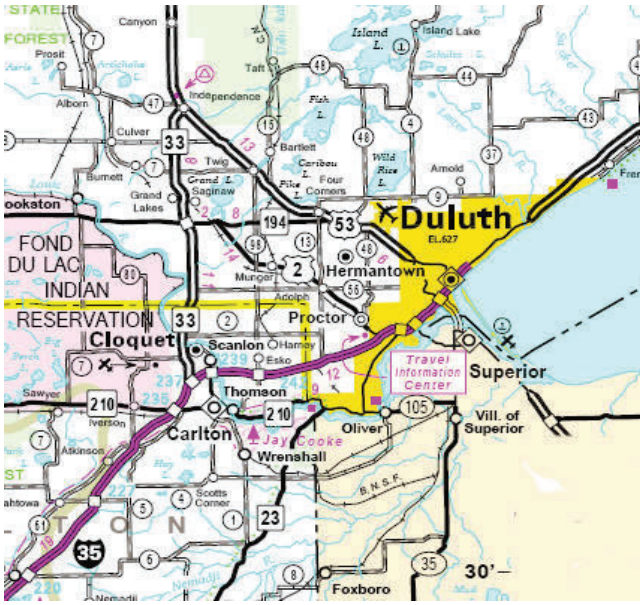
Innovative Use of Oral Health Workforce

The FQHC hosts a dental student externship for students from the Goldman School of Dentistry at Boston University. Students complete 10-week rotations at the FQHC during the fourth year of dental school. This is a mutually beneficial affiliation. Students gain greater proficiency in restorative and surgical skills through exposure to challenging cases and higher frequency of procedures in the safety net. In addition, students learn to effectively interface with patients from multiple cultures with limited English proficiency and low levels of oral health literacy. The externships were valued by the dental clinic because they increased capacity and enhanced work flow. Students contributed by performing initial oral assessments and completing medical histories in preparation for the dentist and also by completing dental procedures as directed.

The externship program provided an opportunity to recruit new dentists to the FQHC. A current staff dentist joined BVCHC after graduating from the Boston University program and the clinic was anticipating hiring an additional dentist from the pool of current students. The National Health Service Corps Loan Repayment and Scholars Program was a helpful tool in efforts to recruit new dentists to the health center. Rhode Island is in the legislative process of allowing public health DHs to provide some school-based oral health screening services. The FQHC offered some school-based oral health services at the time of the case study. A DH from BVCHC provided oral health screening and sealant services for students and referred the children without a dental home to the dental clinic for other services when needed. DHs from BVCHC also staffed health fairs in the community and referred new patients in need of services to the clinic.

Lake Superior Community Health Center
Duluth, Minnesota, and Superior, Wisconsin

- Lake Superior Community Health Center (LSCHC) provided primary care, behavioral health, and oral health services for 11,520 unique patients during 33,473 patient visits in 2014.



- The total number of dental patients in 2014 was 7,695, and 55% of all services provided were oral health services. Only 6.7% of FQHC patients used both medical and dental services at the clinics.

- Four full-time dentists, 1 part-time dentist, and 1 DT provide restorative dental services. There are also 3 DHs and numerous DAs employed at the clinics.

- More than half of all medical patients are insured by state Medicaid (58%) programs, but fully 84% of dental patients are Medicaid insured. Ten percent of dental patients are uninsured, and 6% have private dental insurance.

- Most patients were White (87%); some of the remaining were Black/African American (4%), Latino (2%), Asian (1%), and Native American (2%).

Lake Superior Community Health Center (LSCHC) first opened as a free clinic in 1972. Over 20 years later, in 1993, it became a FQHC look-alike clinic. It obtained full FQHC status in 2000. In 2005 the FQHC moved to its current locations in Duluth and Superior. Dental services were first offered in the Superior clinic in 2005, when a private-practice dentist from the community relocated his practice to LSCHC. Dental services in the Duluth clinic began in 2007, when local and federal stimulus dollars provided the necessary financial support to build a dental clinic. More recent expansion and renovation of the Duluth clinic used ACA funds. LSCHC currently has a total of 11 dental operatories in the 2 dental clinics. The operatories in Superior are configured to permit a dentist to work with multiple patients at one time. In each dental suite, 2 operatories are separated only by a partial privacy wall that allows free movement from one patient to the other. This design permits the dentist to closely monitor the work of extended function DAs providing allowable restorative services, including placing amalgam, that increase efficiency and productivity.

Both the Wisconsin and Minnesota Medicaid programs provide coverage for dental services for adults with some limitations on extensive reparative and periodontal services. LSCHC receives a blended PPS rate for services to Medicaid-insured patients from Wisconsin and a separate dental PPS rate for services to Medicaid-insured patients from Minnesota.

Demand for dental services in LSCHC's catchment area is high. Although there are numerous private dental practices in the area, many do not accept people insured by Medicaid. Demand for primary care medical services at the FQHC is less than for dental services because both states converted their Medicaid medical programs to managed care risk plans. Thus, medical patients have many more options to receive primary care services in the community. Dental benefits are not included in the managed care conversions (except in 6 counties in Wisconsin), so dental services remain in the fee-for-service Medicaid program. This is a significant deterrent to private-practice dentist participation, which results in limited availability of dental services for the Medicaid insured.

In the dental clinics sponsored by LSCHC there is a focus on managing need for emergent care because some patients identify the clinic as an emergency services clinic, not necessarily as a dental home. The FQHC is known to provide dental services on a walk-in basis, so unscheduled patients present daily for care. Hospital EDs in the area also divert patients to the clinics. The Duluth clinic is on a bus line with a stop conveniently located near the clinic. Patients are also known to drive considerable distances to one or the other LSCHC dental clinic and wait to be accommodated for urgently needed oral health services.

Integration of Primary Care and Oral Health Services

LSCHC fosters collaboration between medical and dental providers in the integrated clinics and emphasizes the importance of team-based care delivery for patients. In an effort to provide holistic health services, primary care providers perform oral health screenings on patients and ask about the existence of a patient dental home. Conversely, dental providers complete a review of the medical history each time they treat a patient and refer patients in need of primary medical services. During the fieldwork for this study several examples of collaboration between primary medicine and oral health were provided. In one instance, a patient revealed a diagnosis of hepatitis C to the treating DH because he wanted to ensure that appropriate infection-control precautions were in place. The DH asked if the patient was seeing a medical provider for the condition. When the response was negative, the DH helped the patient make an appointment with a primary care physician at LSCHC and also personally escorted the patient to the Health Access Office to obtain insurance and benefits counseling. In another example, a DH spoke of a patient with diabetes who was having serious foot pain at the time of his preventive oral health visit. Again, the patient was escorted to the primary care clinic to be seen by a medical provider on an emergency basis.

DHs and DAs provide services in several of the primary medical care clinics at LSCHC. Dental auxiliaries regularly screen infants and toddlers in the pediatric clinic and apply fluoride varnishes at periodic pediatric examinations. DHs also perform oral health screenings and oral health education in the prenatal clinic with pregnant women. DHs visit area clinics for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and Head Start programs to provide patient education and fluoride varnishes and referrals back to LSCHC as needed.

The FQHC was anticipating full integration of medical and dental records in its existing EHR in mid-2015. The new dental record module will then seamlessly interface with the GE Centricity platform, which is used for accessing administrative data and medical records. Dental providers are anticipating the benefits of system transparency and the ability to review patients' medication histories and allergies to enhance the quality and continuity of care and to prevent further duplication of services. Currently, patients must provide medication and allergy histories at the dental visit. Once the record is integrated, the provider will be able to access this information through the EHR.

Innovative Use of Workforce to Enable Efficiency and Capacity in the Dental Clinics

Recruiting dentists to work in an FQHC is difficult because of the structure of clinic work, which includes long hours, extended days, and high-needs patients. The dental clinics at LSCHC accept emergency walk-in patients on a daily basis, which makes work schedules somewhat unpredictable and highly demanding. Patients in the safety net often present with need for more extensive restorative or

extraction services than in private practice. LSCHC is continually recruiting for dentists because demand for oral health services is high. The clinics are booking 2 months ahead for both restorative and preventive services. Clinic administrators embrace opportunities to use innovative oral health workforce models to expand capacity, improve worker and patient satisfaction, and create efficiencies that further enable more timely access to care.

In 2009 Minnesota became the first state to enable the practice of dental therapy, with the first graduates from dental therapy education programs in the state entering the workforce in mid-2011. Dental therapists (DTs) and advanced dental therapists (ADTs) are permitted via statutes and regulations to provide a menu of preventive and basic restorative services to patients, with the extent and the supervision required varying by credential. In 2013 LSCHC hired a DT to provide services in its Duluth clinic. The DT is required to be directly supervised by a collaborating dentist.

Using a DT in the dental clinic is considered a positive innovation, even though it requires workflow redesign and the direct oversight of a dentist. Having a professional with the capacity to provide some preventive and several restorative services offers flexibility in patient scheduling that addresses the constantly changing patient mix of scheduled and unscheduled patients arriving at the clinic for oral health services. Dentists are able to reassign patients in need of basic restorative care to the DT in order to address the more complex urgent need from emergency patients. Patients are receptive to the DT and are happy to receive the needed oral health services.

The oral health teams at the clinics acknowledge the capabilities of all staff professionals and recognize the need to use the complex of skill sets and competencies in an efficient manner to address the unpredictable daily schedule. In speaking about managing patient care, dentists at the clinic commented on the benefits of flexibility in work allocation. The DT is assigned a range of diagnostic and treatment services, depending on the patient flow each day. The dentists appreciate the ability of the DT to complete basic restorations while the dentists addresses complex infections or other urgent needs.

DAs are viewed as essential workforce to do fluoride varnish applications in the pediatric clinic or work with dentists when there is high demand for 4-handed dentistry services. DAs who are certified in extended functions in Minnesota or Wisconsin provide coronal polishing services for children or limited restorative services, including placing and contouring amalgam to complete a restoration. If certified in Minnesota, a DA is permitted to initiate and place an intravenous line. The clinics are functionally arranged to allow a dentist to work with 2 patients simultaneously in concert with an expanded function dental assistant (EFDA) who can prepare or complete a patient as the dentist visits another.

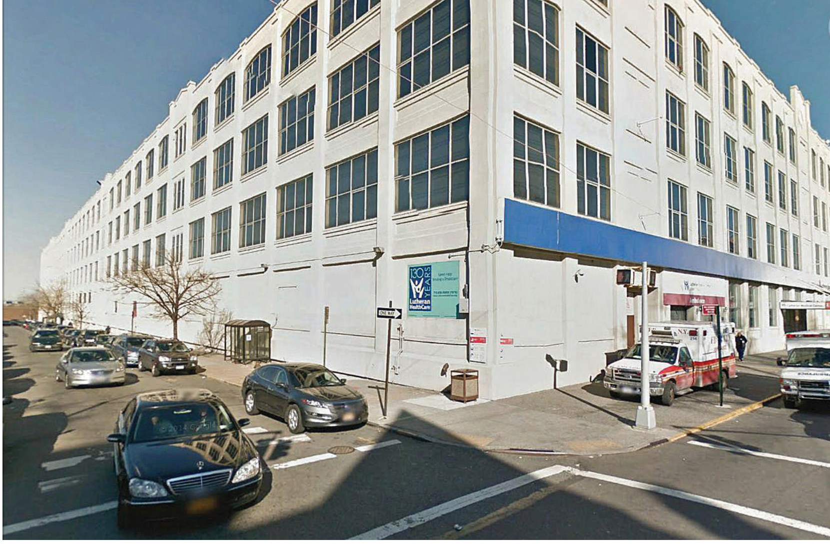
DHs in the clinics can triage a patient, complete the x-rays for diagnosis, and initiate local anesthesia to prepare the patient for restorative care in addition to providing a range of preventive services.

Increasing patient engagement with oral health and improving oral health literacy was viewed as important to improving the oral health outcomes of the clinics' patients. DHs working under public health supervision are employed as outreach specialists to provide community education, prevention, and referral services. DHs employed by LSCHC are actively involved in school-linked sealant programs, community education, and prevention visits at WIC clinics and Head Start programs in the area.

Providing Services in 2 States

LSCHC is located near the border of 2 states and is actively providing oral health services in separate clinics easily accessed by a bridge that crosses state boundaries. The practical implications of providing care in 2 states with different health workforce regulation and professional licensing requirements and distinctive Medicaid programs poses challenges to seamless care provision. Wisconsin does not allow the practice of dental therapy. Although the DT can treat a patient from Wisconsin in Minnesota, the DT is unable to treat that patient in Wisconsin.

In addition, requirements for patient visits in state Medicaid programs vary. Minnesota requires that a Medicaid-insured patient is seen by a dentist at each threshold visit for any services provided during the encounter to be reimbursed. Wisconsin permits a DH to directly bill the Medicaid program, so a dental examination is not required at each visit for services to be reimbursable. If a Minnesota Medicaid patient is seen in the Wisconsin clinic for preventive services delivered by a DH, staff need to ensure that the patient is also examined by a dentist. Although the health center is successful at managing the variation, doing so requires extensive knowledge of government regulations and workflow adjustments related to care provision for individual patients. Oral health staff are required to be licensed in both states to provide flexible staffing allocation in the 2 clinics. Guest licenses are available for DHs from Wisconsin to practice in Minnesota, which provides flexibility. Administrative and billing staff are also required to have extensive knowledge of each state's regulations and Medicaid program requirements.



NYU Lutheran Family Health Centers
Brooklyn, New York

- As one of the largest FQHCs in the nation, NYU Lutheran Family Health Centers (LFHC), which is part of the NYU Langone Lutheran Health System, includes 9 health centers, 28 school-based health and/or dental clinics, 3 day care centers, 16 community medicine sites providing care to the homeless, and the largest dental residency program in the United States.
- LFHC serves more than 86,000 unique patients with approximately 530,000 visits annually.
- LFHC provides dental services at 6 clinic sites in Brooklyn. The largest of these clinics is located within the NYU Langone Medical Center.
- The main dental clinic is mostly staffed by dental residents.
- Patients speak more than 50 languages, and 70% of the staff speaks more than 1 language.
- The dental residency program places residents in more than 200 community health centers nationwide and in some foreign countries.

Lutheran Family Health Centers (LFHC) is the home of the NYU Lutheran Dental Residency, which began its dental residency program in community health centers in 1974. NYU Lutheran Dental offers 7 residency programs: AEGD, GPR, pediatric dentistry, endodontics, dental anesthesiology, periodontics, and orofacial pain. The largest of these are the primary care residencies in AEGD and GPR, with over 200 dental residents serving in 75 health centers in 28 states. The pediatric dentistry program currently trains 88 dentists in 9 states. Over the history of the residency program more than 1,000 residents have completed training through NYU Lutheran Dental, and approximately 35% of those graduates have worked in some aspect of public health dentistry. The AEGD and GPR residencies are especially amenable to training rotations in community health clinics because hospital rotations are not required for these specialties. The dental residency programs use distance-learning modalities and web-based applications to provide both training and oversight to the distributed locations in which residents are completing rotations. Residency administration at NYU Lutheran Dental examines the suitability of all community health center applicants to provide residency rotation opportunities based on Commission on Dental Accreditations guidelines for dental residency programs. All programs must have at least 2 qualified precepting dentists to supervise training.

Other characteristics of the clinics are considered, such as whether enough crowns or periodontal services are provided to the clinics' patients. Dental residents must gain sufficient threshold experience with providing these and other services. When a state's Medicaid program limits these services, it is unlikely that a residency in a clinic would provide the experience needed for the resident to achieve needed competencies.

Residencies are generally located in regional clusters where there are several community health centers participating in the NYU Lutheran Dental Residency Program. This is essential to maximize efficiencies with program administration and costs. There are regional associate directors of the residency programs who provide oversight and direction for the health centers and the dental residents in each area. Licensing requirements vary by state, so it is important to have knowledgeable staff in each region of the country. The primary care dental residency programs (AEGD, GPR, and pediatrics) are supported with dental graduate medical education funds so that each dental resident receives a salary from the program. The availability of federal grants has helped NYU Lutheran Dental to extend the dental residency program to new regions in the United States. The residency program in cooperation with several of the health centers in the residency program recently applied for a federal grant that focuses on interprofessional education and interdisciplinary service delivery.

A recent expansion in the number of dental schools with curricula emphasis on community and public health is increasing interest in dental student externships in community health clinics. This is affecting demand for community health centers to serve as rotation sites for both dental residencies and dental student externships. LFHC currently provides dental student externships through contracts with several

dental schools, including Columbia University, Tufts University, and New York University (NYU). Pediatric residents from NYU also rotate through LFHC's dental clinics. Thus, there is a contingent of students and residents from a variety of educational programs rotating within the NYU Langone Lutheran health care system on an ongoing basis.

The dental residencies in Brooklyn are always in highest demand from graduating dentists who wish to complete a dental residency program. Informants suggest that a reason for this preference might be that urban locations provide more opportunities for spouses than the rural residency locations. There are more minority dentists in the dental residency program than elsewhere in the country, but the actual percentage of minority dentists appears lower because of the large overall number of residents in the NYU Lutheran Dental Residency Program. The residency program is open only to U.S. citizens or to noncitizens with appropriate visas. The program is not able to sponsor visa applications.

Dental Care at NYU Lutheran Family Health Centers

LFHC provides dental services at the main health center located within the NYU Lutheran Medical Center (which is part of NYU Langone Lutheran) in Brooklyn. In addition, dental services are provided at 5 of the primary care clinics operated by LFHC in the Park Ridge (8 operatories) and Park Slope (4 operatories) areas of Brooklyn, at the main mental health clinic building in Brooklyn (4 operatories), and at the Caribbean-American (5 operatories) and Brooklyn-Chinese (4 operatories) Health Centers in Brooklyn. These dental clinics serve an extremely diverse community with patients speaking over 50 native languages. The dental professional staff is also very diverse. Over 70% of LFHC's staff speak at least 1 language other than English, which contributes to culturally competent care and increases the opportunity for quality of communication between patients and providers.

The dental clinic at the main health center is the largest clinic in the FQHC. The dental clinic and the adult specialty clinic occupy the first floor of the hospital. It is open 5 days a week for 12 hours a day and on weekends until 5:00 PM. Professional staff in the main clinic includes 70 dental residents who rotate through the clinic each year, approximately 40 dentists (many of whom are part time and practicing in the local community), 11 DHs, and approximately 14 DAs. The main clinic currently houses 14 dental operatories, but this number is about to double. The dental clinic is open to walk-in patients with a sufficient number of daily emergencies to necessitate that 1 dental chair is set aside exclusively for walk-in patients. Sixty-eight percent of the dental patients have dental coverage through a Medicaid managed care program in New York and 62% of the patients who receive services at Lutheran access both medical and dental providers in LFHC's clinics.

There is a mixture of both adults and children who receive treatment at the dental clinic. Dental residents complete all prophylaxis on children who generally only require supragingival scaling or coronal polishing.

DHs provide all of the complete prophylaxis for teens and adults. Patients appear to be somewhat more literate about their oral health than in the past and there are not as many nutritional issues noted by providers. However, the population in Brooklyn is transient, so following patients and completing dental treatment plans is challenging. The number of dental treatment plans for patients far exceeds the number of treatment plan completions for several reasons, including that patients move out of the area and are lost to the system, there are changing coverage guidelines under various Medicaid managed care plans, and some private insurance plans lack coverage for complex procedures.

Integration of Primary Health and Oral Health Services

All dentists review the complete health and medication history for each dental patient and vital signs, height, weight, and blood pressure are taken at each visit. Patients are also asked about pain. Both dentists and primary care clinicians in the health center request consults when there is either a medical or dental concern that would require other professional expertise. Lutheran is also a medical residency training site, so medical and dental residents are readily available to respond to an immediate concern in any of LFHC's clinics. Referral efforts within the Lutheran system were evaluated as both efficient and successful for patients.

There were other nascent efforts at the health center to integrate services. The dental and family practice residency programs were considering opportunities for interprofessional education for medical and dental residents. The chief of pediatrics was trying to institute a program to engage pediatricians with applying fluoride varnish. The obstetrical clinic routinely referred pregnant patients for prenatal dental services. The dental clinic hosted baby showers for these patients to engage them with obtaining oral health services during pregnancy.

The EHR at Lutheran was evolving because of the rather recent affiliation with the NYU Langone Lutheran Health System. As a result, several legacy systems needed integration. The dental record was currently a separate module in the EHR, but dentists were able to access the patient medical record through a separate sign on to that system. Integration of the health record was expected to occur within the coming 3 years.

Innovative Use of Workforce

The main dental clinic was experiencing a no-show rate of about 33%. In response, the health center created a position called the patient care treatment coordinator. The position was conceived to provide patient education, information, and navigation services. It is currently filled by a professional with 12 years of experience as a DA and who has a master's degree in education. She is also bilingual. She works with an ombudsman for each of the different language groups when the need arises. Her function is to greet

patients as they arrive for a procedure and talk with them about what to expect from the day's appointment. In preparation for each patient, the coordinator speaks with the treating dentist to obtain an understanding of the anticipated procedure. The coordinator accompanies the patient to the treatment room to facilitate the patient's orientation to the clinic. Since the inception of this program, the no-show rate has dropped to 19%. Patients identified as needing this service are those who have failed successively to complete treatment plans and/or have a history of not showing for scheduled appointments. The position has been so successful that the dental clinic was considering hiring 2 additional staff to fill similar roles. In addition, patients had come to trust the coordinator and were revealing needs for other health and social services unrelated to dental care.

In 2009 LFHC assumed the management of school-based health and oral health programs in Brooklyn that had previously been under the auspices of the New York City Department of Health. Five DHs employed by Lutheran are working in the mobile program and using portable equipment to treat children in 28 schools. The DHs provide education, screenings and assessment services, fluoride varnishes and sealants, and some prophylaxis. When further dental treatment is needed, parents are notified and a dental appointment is scheduled so that the child can be treated when one of the program dentists comes to the school to provide services. Ninety percent of the schools in the program are elementary schools, and the remainder are a mix of middle and high schools.

Penobscot Community Health Care
Bangor, Maine

- Penobscot Community Health Care (PCHC) provides primary medical, preventive, chronic disease management, mental health, and oral health services, as well as numerous ancillary services including pharmacy.

- Oral health services are mainly provided at PCHC's Dental Center in a building adjacent to the main health center.

- In 2013 PCHC served 59,879 unique patients and 21,035 unique dental patients in approximately 400,000 visits.

- Patients served at the health center clinics are mainly White (95.8%) and lower income with 70.8% reporting incomes at or below 200% FPL.

- Approximately 60% of dental clinic patients are adults. About 90% of the children and 45% of the adults treated at the clinics are Medicaid eligible.

Penobscot Community Health Care (PCHC) was founded in 1997. It is Maine's largest FQHC, and 1 of only 11 FQHCs in the nation designated as a Teaching Health Center. PCHC offers residency programs in GPR and for nurse practitioners, physician assistants, and pharmacists. In addition, PCHC sponsors interdisciplinary training opportunities for a wide variety of health and oral health professionals in the region. PCHC is recognized as a PCMH. The health center employs over 700 people, including health and oral health clinicians and ancillary support staff. The FQHC provides health and/or oral health services in 18 locations in northern Maine.

PCHC's dental center offers a comprehensive array of dental services in its main dental facility in Bangor and also at the Helen Hunt Health Center, an affiliated clinic in Old Town, Maine. Dental hygiene services are offered at the Capehart Community Health Center, also in Bangor, and at the Jackman Community Health Center in Jackman, Maine. Jackman is located a distance from Bangor in the northwestern part of the state and near the Canadian border. In addition, PCHC provides dental services at a school-based health center in Brewer, Maine.

The dental center at PCHC was opened in 2000, and its services and capacities expanded over time to address patients' needs. Since 2000 the main dental center has grown from 6 dental operatories to its current configuration of 46 dental suites. About one-quarter of these surgical suites are used for dental hygiene services and the remainder are for general or specialty dentistry.

The affiliated dental clinic in Old Town is equipped with 2 operatories. Dental staff at PCHC currently includes 5 general practice dentists, 1 prosthodontist, 2 orthodontists, 5 GPR residents, and an oral and maxillofacial surgeon who works half-time. The staff also includes 3 faculty dentists (1 endodontist, 1 periodontist, and 1 advanced general practice dentist), 9 DHs, and 23 DAs, several of whom are qualified orthodontic assistants. Dental specialists at PCHC are mostly part time. Many have private practices in the area and others are partly or fully retired specialty dentists who have a desire to contribute to care for the underserved. Specialty services at the dental clinic at PCHC include pediatric dentistry, periodontics, prosthodontics, orthodontics, and endodontics.

Demand for dental services is high, with staff dentists averaging 17 patient encounters in a 10-hour day. There is a 2-month waiting period for new patients to obtain an appointment. Adult dental patient visits are predominantly driven by emergent care needs. The dental clinic offers expanded hours (a 10-hour day) to accommodate patients, some of whom travel up to 3 hours one way to receive oral health services because services are unavailable locally. The dental center also provides care for special needs patients, who travel from various regions of the state. The patient base is diverse, mostly of lower socioeconomic status, and generally not highly educated.

The clinic accommodates walk-in and call-in patients on a first come, first served basis from 8 AM to 4 PM and has between 12 and 20 unscheduled patients arriving for emergency services daily. The FQHC has a no-show rate of 30% for scheduled patients, so it implemented a no-show policy that removed a patient's privilege to schedule an appointment and required him or her to walk in and wait to be treated when needed. This strategy resulted in about a 7 percentage point decrease in the no-show rate, reducing it to about 23% currently. Patient education is an integral part of the dental clinic's initiative to improve patients' treatment completion rates. PCHC dental staff recognize the importance of promoting greater oral health literacy as part of their initiatives to encourage patients to complete prescribed dental and dental hygiene treatments.

The current dental center building is the result of 3 separate construction projects, each of which incrementally increased the number of operatories. General and specialty dentists are organized in specialty specific pods in several wings of the main dental clinic. In the last few years PCHC has mainly focused on developing resources to provide specialty dental services in the Bangor clinic in addition to general dental care. Building capacity for specialty services was important from both the patient and provider perspective.

MaineCare, the Maine Medicaid program, provides comprehensive coverage for dental services to children as mandated under the requirements for early periodic screening, diagnostic, and treatment services by the federal government. The adult dental benefit is limited to emergency services only, including restoration to prevent the loss of a tooth, anterior endodontic services, and extraction. As a result, many adult dental patients, even those who qualify for MaineCare, are required to pay for excluded services on a sliding fee scale based on income or for the set cost of "out of scope" services including dentures based on costs determined by the FQHC.

The limited dental benefit in MaineCare and low reimbursement rates for limited services for adults results in low numbers of general and specialty private-practice dentists participating with the Medicaid program. As a result, MaineCare-eligible patients struggle to find both general and specialty dental services in the region. PCHC was a resource for general dentistry services in the past and now, more recently, for a broad range of specialty dental services. Configuring a multispecialty practice at PCHC has many positive benefits for patients, for example, the dental clinic is now a comprehensive dental home. The clinic encourages patients to establish a dental home by making a concerted effort to ensure continuity of care and scheduling patients continuously with the same dentist whenever possible.

Providing specialty dentistry has proven to be important for clinic patients. The clinic began offering orthodontic dental services in 2013 with 1 orthodontist. At that time, there were 200 patients on a waiting list. There are currently 2 orthodontists and a waiting list of 500 patients. In addition, the clinic has 4 functional pods designated for pediatric dentistry, which PCHC hopes to utilize by 2016. There is also an

oral surgery suite that was rebuilt 18 months ago. At the time of the case study, PCHC was in the process of obtaining authorization from the state to also provide moderate sedation in the oral surgery suite.

There is 1 main sterilization unit, 2 additional sterilization units, and a laboratory with 3 additional sterilization units available in each cluster of dental pods in the dental clinic. The streamlined layout of the clinic inclusive of sterilization units and laboratory space generates greater efficiency in preparing equipment for patient appointments.

The General Practice Residency Program

The GPR program began at PCHC about 6 years ago with 2 dental residents. It currently hosts 5 dental general practice residents. PCHC participates in the dental graduate match program to select residents. Current dental residents at PCHC represent broad geographic origins, including dentists from Texas, California, Florida, and 2 from New York. At one time the residency program at PCHC had expanded to include 8 pediatric dental residents, but due to financial and staffing constraints that program is no longer active. Also, at one time PCHC hosted student externs from Boston University's and Tufts University's dental schools in Boston, but that program was recently discontinued. However, PCHC has agreed to precept student externs from the recently opened dental school at the University of New England in Portland, Maine, beginning in 2017.

When dental residents begin their rotations, they are expected to complete 10 patient visits daily. They are assigned 1 DA. As they become more proficient in practice, they are progressively required to assume more patients. By the second half of their residency program, each dental resident is treating approximately 16 patients daily with assistance from, on average, 1.5 DAs. Rotations in various dental specialties are an important part of the clinical training for general practice residents at PCHC. Having specialty dental providers in-house eliminates the need to find clinical rotations in specialty dental practices in the community. In addition, the complexity of specialty services supplied at the FQHC offers the GPR residents significant experience with patients with complicated oral health care needs.

Integration of Primary and Oral Health Services

Approximately 30% of dental clinic patients are also medical patients at PCHC. The FQHC has an integrated EHR that permits dentists to obtain medical and medication histories on patients. Dentists have the opportunity to refer patients to the medical clinic when health conditions are concerning. Dentists are also able to directly consult with the medical providers at PCHC on mutual patients. The EHR has been in use since 2002, enabling proactive interventions in patient care and the ability to build and monitor treatment plans. The EHR allows for interface between the primary care and dental clinics at the

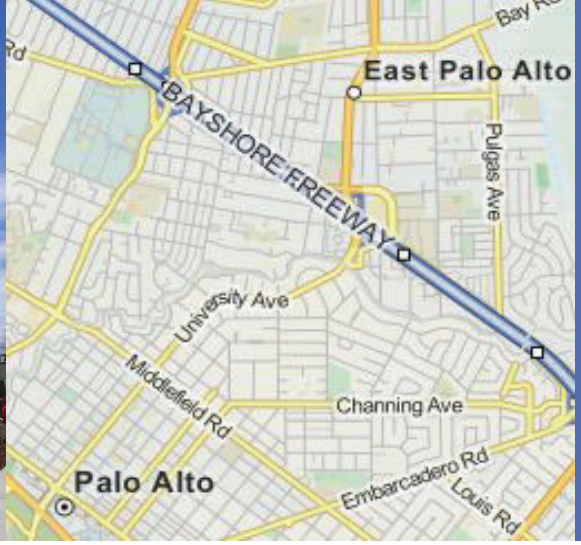
health center, with the school-based oral health programs, and with the satellite hygiene clinics to enable coordinated care for patients.

Innovative Use of Oral Health Workforce

Although the clinic does not currently utilize EFDAs, recently hired DAs are mostly nationally certified dental assistants (CDAs). The CDAs are important members of the dental team. Several CDAs have previous nursing experience, which was identified by staff as a helpful skill set for chairside assistants when dealing with challenging patient cases. Orthodontic assistants were also identified as important members of the oral health team at the clinic.

PCHC has a school-based oral health program that is an important community asset for providing services to children in the Brewer School District. The program began as a portable program staffed by public health DHs from PCHC sharing space in the school nurses' offices in the K-8 and high school's administrative wings. DHs provided prophylactic and fluoride services to eligible children and referred them to the clinic for other services as needed. When the school district undertook construction of a new school that included an expanded school-based health clinic, a permanent dental operatory space was part of the design. This enabled provision of oral health services, including general dentistry and preventive services, at the school clinic. One dentist and 2 DHs rotate bimonthly to provide an array of hygiene and dental services for the school-based patients.

PCHC contacts the parents of enrolled children asking about their access to dental providers. Children who do not have a dental home have the option of obtaining a broad spectrum of oral health services in the school clinic. Clinical staff also promote oral health literacy among teachers, parents, and children at the school. PCHC dental staff currently serve between 10 and 12 unique students per month. In a 6-month period, there were 83 visits to the clinic. PCHC also manages a dental hygiene clinic in Jackman, where access to services is limited. The clinic offers dental hygiene services to both children and adults. Two public health DHs rotate bimonthly to staff the clinic, traveling from the Bangor to Jackman.



Ravenswood Family Health Center
East Palo Alto, California

- The Ravenswood Family Health Center (RFHC) provides medical, dental, mental health, substance abuse, vision, and other services.
- In 2015 RFHC achieved NCQA certification as a PCMH.[10]
- RFHC saw a total of 11,617 patients in 2013. Of these, 39% were children, 56% were adults, and 5% were older adults.[11]
- In 2013 the dental center saw 4,427 patients in 11,996 visits, a 50% increase from the prior year. Approximately 50% of patients were children.
- A majority (62%) of patients are considered best served in another language and 94% are racial/ethnic minorities, with the majority being Hispanic.[11]
- Of the patients with a known income, 98% are at or below 200% FPL and 86% are at or below 100% FPL.
- Almost half (48%) are uninsured, with 41% covered by Medicaid and 3% covered by Medicare.

Ravenswood Family Health Center (RFHC) is located in East Palo Alto, a mixed industrial and residential area located midway between San Francisco and San Jose. The medical facility opened in 2001 in portable buildings, with the dental center opening in a permanent space across the street in 2010. In 2015 a state-of-the-art permanent medical facility was opened a block from the existing site, and included 2 co-located dental chairs in the medical clinic. The dental clinic is staffed by 2.2 full-time equivalent (FTE) hygienists, 2 dental residents, and 1.2 FTE pediatric dentists, 2.8 FTE general dentists, 3 front desk staff, 1 office manager, and 16 DAs. The dental director is a pediatric dentist who splits her time between director and clinical duties.

The clinic provides full service dental care. The dental director, Dr. Yogita Thakur, a pediatric dentist, has been granted operating room (OR) privileges at Lucile Packard Children's Hospital and at Stanford's Ambulatory Surgery Center. In 2013 she treated 59 children in the OR, with an additional 70 children on a wait list for OR services.[11] RFHC serves mainly low-income patients from San Mateo county. The community, which is located between 2 freeways and the San Francisco Bay, has traditionally been a "landing pad" for new immigrants, many of whom stay for a short time and then move elsewhere.

However, there are also long-term residents. Over 500 of the patients at RFHC are homeless.[11] Despite abundant wealth in Palo Alto, which is the home of Stanford University, East Palo Alto has persisted as a predominantly low-income and minority community. In 2014 Facebook opened a large new campus on the northern border of East Palo Alto. The influx of tech workers to that campus, along with the ongoing technology and housing boom in the Bay Area, has exacerbated the financial pressures on low-income residents of the East Palo Alto community, making the availability of affordable local medical and dental care of critical value.

The Electronic Health Record

RFHC is equipped with an EHR. The dental EHR allows for capture of both diagnostic codes and treatment delivered for patients, surpassing the standards that most dental offices maintain with their recordkeeping. The dental EHR uses Dentrix software, and the medical EHR is a NextGen product. Each is supported by separate vendors and not linked. Although NextGen has a dental EHR product available, it is not linkable to the NextGen medical record in a way that provides for seamless integration. RFHC desires an integrated EHR and is assessing creating additional interfaces to improve cross-functionality. For the time being, referrals are made on paper and faxed to the medical or dental clinics.

Integration of Primary Care and Oral Health Services

The co-location of the medical and dental clinics allows for integration, particularly for children and pregnant women. In 2009 California eliminated adult dental benefits in the Medicaid program, but in 2014

these benefits were partially reinstated.[12] One of the key benefits in the revised program is comprehensive dental benefits for pregnant women. The OB/GYN prenatal providers at RFHC counsel all pregnant patients on oral health and provide referrals to obtain a dental cleaning and check-up. If a pregnant patient does not have a dentist (many do not), the patient is referred to the RFHC dental clinic. Informants estimated that 75% to 80% of pregnant women cared for at the clinic were affected by dental problems. Many of the pregnant clients know they have problems and need treatment, but do not realize they gain dental coverage in Medicaid when they become pregnant.

Additionally, the pediatric department was very aggressive in assessing and referring children with dental problems to the dental clinic to get them established with dental services as soon as possible. The Child Health and Disability Prevention Program[13] is a preventive program in California that provides care coordination to assist families with accessing health services and covers many of the children seen at RFHC. The program requires a dental assessment and report, and this program, in addition to the general prevalence of dental problems in the pediatric population, has spurred the pediatric staff at RFHC to ensure that dental issues are a top priority.

Adult medicine is less formally connected to the dental clinic, although the dental needs of the adult population are very high. Established patients of RFHC can self-refer to the dental clinic. The lack of an interoperable EHR between the dental and medical clinics limits the capacity to track the patients seen in both settings. Effort is made to accommodate urgent dental needs the same day, regardless of whether the patients first present at the dental clinic or at the medical clinic. The medical EHR has care guidelines for many conditions, but they have not yet included a dental component for all primary care adult visits. The only standardized medical-dental link is for diabetics, who receive a referral to ensure an annual dental visit as part of the standardized care protocol. The dental clinic refers to the medical clinic if health issues that need attention are identified while doing the dental assessment.

Addressing the oral health care needs of the population served by RFHC is challenging. Appointments are booked within 45 days or 6 weeks to limit no-show rates and the clinic must balance efficient scheduling with a high demand for care. Before the RFHC dental clinic opened, there was virtually no access to dental care for the community, resulting in many unmet dental needs in the existing population. With immigrants coming to the area, RFHC dental clinic also gets many new patients with high dental needs. Improving the oral health of the population over time through a combination of education, prevention, and treatment, will be an ongoing challenge at RFHC as they try to address the backlog and influx of acute dental problems.

Innovative Use of the Oral Health Workforce

RFHC is participating in a statewide pilot project called the Virtual Dental Home (VDH).[14,15] The VDH extends dental care to schools, nursing homes, and Head Start centers across the state. As part of this project, RFHC partners with Head Start sites in San Mateo. The VDH model deploys DHs, registered DHs in alternative practice (RDHAPs), and DAs to do screenings and assessments of vulnerable populations in community-based settings. The project uses a cloud-based electronic dental record to provide teledentistry services. A DH in the field transmits records to a partner dentist in another location. The dentist reviews the record and completes diagnoses and treatment plans remotely. Patients with nonemergency needs are managed by the DHs and DAs in the community, and those who need referral and acute care are provided with case management services to obtain needed services. All children seen in the VDH have the option of being referred to the RFHC dental clinic if they have no usual source of care. In Head Start and Early Head Start programs, dental care is a core performance metric, so partnership with the VDH helps these programs meet that goal.

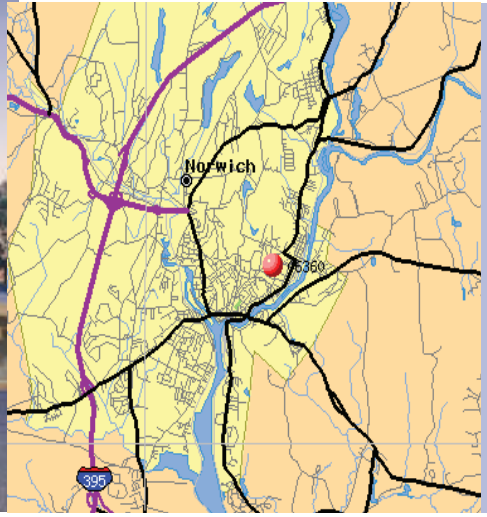
The program was enabled through the Health Workforce Pilot Project in California. The positive final evaluation of the project set the stage for the passage of legislation to enact changes into law to expand the scope of practice for DAs and DHs to include tasks performed without the presence of a dentist, including x-rays and interim therapeutic restorations. The law also expanded Medicaid coverage to pay for teledentistry services. The RFHC partnered with the VDH project to secure funding to hire an RDHAP and a coordinator to staff the program. The project accesses dentists at RFHC and at another community clinic, Sonrisas, for teledentistry review, diagnosis, and treatment planning. In the 2014 school year over 200 children in Head Start and Early Head Start sites were treated. During the first 3 years of the grant the VDH served 749 children in the community and placed interim therapeutic restorations in approximately 20% of these children. In 2015 the RFHC submitted a grant to San Mateo First Five and received funding of $300,000 per year to continue the program for an additional 3 years, a testament to the program's success.

The VDH partnership has additional benefits in addition to the services provided. The Head Start staff and parents, many of whom do not fully understand the implications of oral health problems in young children, are educated on the importance of dental care. The children who need further care are assisted in scheduling and attending dental appointments. Many of the families have additional children, so the health literacy developed through the educational component for the families reaches beyond the individual child who receives treatment through the program.

The VDH faces some challenges. There is turnover of children and families in program sites, making ongoing tracking of patient outcomes a challenge. A second challenge is that the project requires keeping 2 sets of dental records. The VDH project is a statewide research and pilot project, so all records must

be entered into a cloud-based system for that project and again separately for RFHC. Therefore, 30% of staff time is devoted to duplicating dental records for children seen in the program. Another challenge is the mismatch between funding sources. Although recent legislation in California (AB1174) enabled billing of Medicaid for teledentistry services, the clinic is reimbursed on an encounter basis.[15] Since the dental hygiene visit and the dental review of records by the Doctor of Dental Surgery (DDS) are on the same day, it is 1 billable encounter. Also, time spent traveling and educating are not billable services.

In summary, RFHC is a critical safety net provider in San Mateo, and one of only a few dental clinics that accept Medicaid patients. RFHC has been innovative in modernizing its electronic dental records, but is limited in further leveraging this innovation across disciplines by the lack of system interoperability. The VDH has proven to be a successful model for using new workforce configurations to care for the most vulnerable populations. However, it remains a separate project from the clinic's core functions and relies on grant funding, limiting sustainability over time. RFHC's experiences provide insights into the larger system issues presented by policy, technology, and funding that must be addressed to truly enable innovative solutions to addressing the oral health needs of the population.



United Community & Family Services
Norwich, Connecticut

- In 2014 United Community & Family Services (UCFS) provided more than 31,000 medical visits to 8,506 unique patients and more than 18,600 dental visits to 6,585 dental patients.

- UCFS provided between 1,500 and 1,600 oral health visits per month in its dental clinic and mobile dental program.

- More than one-third (36.7%) of dental patients are also primary medical patients and 14.5% of dental patients receive behavioral health services at 1 of the UCFS clinics.

- Approximately 57% of dental patients are adults and 75% are Medicaid eligible and insured through HUSKY Health. The Connecticut Dental Health Partnership (CTDHP) administers those benefits.

- The backgrounds, cultures, and languages of the patient population at UCFS are various and included many Asians, Latinos, and Polish people and some Native Americans. Several staff speak French, Creole, or Haitian.

United Community & Family Services (UCFS) is an FQHC headquartered in Norwich. The organization serves patients in 3 primary care practices, 5 behavioral health practices, and 1 dental clinic variously located in Norwich, Plainfield, Griswold, Colchester, and New London, Connecticut. The main clinic, the Edward and Mary Lord Health Center, houses pediatric, internal medicine, and geriatric clinics, an extensive dental suite, a women's health center, mental and behavioral health services including a gambling addiction center, and a pharmacy. A recent extensive renovation increased the size of the clinic by about 50% with the addition of 12 new medical exam rooms, the addition of a new dental operatory, and 18 new behavioral health rooms. UCFS employs approximately 350 people. UCFS also sponsors a mobile/portable dental program in schools, a school-based health center at Norwich Technical High School, an elder day care program in Norwich, and a residential care facility for elders. The health center is recognized as a Level 3 PCMH by NCQA.

UCFS dates back to 1877. The current organization was a merger between 2 community service agencies: United Community Services and the Family Service Association in 1999. In the early years, UCFS was a human service agency that provided a range of clinical services for children, public health nursing, and dental services.

There was an early focus on outpatient mental health services for adults and children and accompanying family support services. UCFS currently provides a significant number of outpatient mental health services, behavioral counseling services, and community behavioral health services at the main health center in Norwich and at a number of sites throughout nearby communities.

The Connecticut Medicaid program covers a comprehensive menu of oral health services for eligible children under age 21, and also provides extensive coverage for adults. Adults qualify for annual prophylactic services. Covered services include restorative care and surgical extractions. Medicaid now also covers separate oral health screening and assessment services for children, which facilitates dental hygiene assessment and referral in off-site programs, including the school-linked oral health programs.

FQHCs and look-alike clinics in Connecticut negotiated separate PPS rates for medical, dental, and behavioral health services. Connecticut previously expanded Medicaid eligibility to populations at 200% FPL. However, the fiscal year 2016 state budget reduced eligibility to 150% FPL.

The Norwich health center at UCFS is open 2 Saturdays each month from 9:00 AM to 1:00 PM for dental and primary care health services. Transportation to the clinic was an emerging problem for local populations. The SEAT bus system is infrequent and has limited routes requiring multiple transfers.

Until recently, casinos owned by tribal groups in the area provided workers with transportation between the casinos and the large parking lot near the clinic from which patients could easily walk. The casinos have stopped this service, which for some patients impedes access to medical, dental, and behavioral health services.

Dental Services at UCFS

During the early years only children and the elderly were eligible for dental services at UCFS. The dental clinics opened to adults during the 1990s. The dental clinic sponsored by UCFS currently contains 11 operatories (7 dental and 4 dental hygiene), with an additional 1 under construction. UCFS employs 4 full-time and 2 part-time dentists, 1 of whom works in the clinic 2 days a month doing only extractions. Dental student externs and dental assisting students also rotate through the clinics.

New dental patients are referred from the hospital ED, by word of mouth, and internally by other providers. The dental clinic schedules about 525 patients each week with a no-show rate of 23%. There is a higher no-show rate for scheduled dental hygiene services than for dental appointments. UCFS developed a uniform no-show policy for patients, requiring each patient to sign an agreement agreeing to come for scheduled appointments or to notify the clinic when unable to do so. UCFS established a formal notification and remediation process for repeated no-show patients, resulting in a "limited status" designation. Once a limited status is determined, a patient is no longer permitted to schedule an appointment but is allowed emergency access to the clinic. A DH in the clinic monitors no-show and limited-status patients on a regular basis.

The clinic accommodates walk-in patients, including a mix of new and established patient. No procedures are done on the day of a walk in. The problem is diagnosed, a treatment plan is developed, an antibiotic is prescribed when necessary, and a subsequent appointment for treatment is scheduled. One clinic dentist is assigned daily to exclusively respond to emergency visits. UCFS has an access to care specialist working at the ED at nearby Backus Hospital to help patients who do not have a primary care doctor or who lack insurance to connect with services. The specialist uses a web-based application to schedule the patient at UCFS for the next available appointment for any clinic service.

UCFS provides a high volume of restorative and extraction services because of high rates of caries in the population. Clinic staff encourage patients to establish a dental home by fostering inclusion of preventive services in dental treatment plans. When dental patients need referrals to specialty dentists, UCFS maintains lists of specialty dentists willing to treat the publically insured that patients can call to schedule care. There is a private multispecialty dental practice with multiple office locations in the surrounding area that accepts referrals for services. In addition, there are oral and maxillofacial surgeons in the area that will treat publicly insured children under 21.

Integration of Oral Health With Primary Care

UCFS does not require a dental or behavioral health patient to also be a primary medical patient, although over 43% of patients accessed 2 services at the clinics and almost 13% of patients received primary care, dental services, and behavioral health services through UCSF. More than one-third (36.7%) of dental patients were also primary care medical patients and 14.5% of dental patients received a behavioral health service through a UCFS clinic.

One example of efforts to integrate service delivery at UCFS is the inclusion of a visit with a DH in the periodic well visits for 1-, 2-, or 3-year-old children in the pediatric primary care clinic. When a well-child visit is booked, a DH is also scheduled to screen the child in the pediatric department. In the past, scheduling was a manual process that was subject to error. When the EHR became fully integrated, scheduling became an automated process, raising the level of attention to the initiative and facilitating ownership among pediatric and dental providers. As a result, parents have grown to expect the oral health screening by the DH as part of the routine pediatric visits.

The DH provides instructions about oral health and gives each child a complimentary toothbrush. The opportunity for parental contact also enables the DH to ask about parental oral health and barriers to getting care and to instruct about the impacts of smoking and poor nutrition on oral health outcomes. DHs commented that when parents learn to care for their children's teeth, they also learn about their own oral health. Informants from the pediatric clinic observed that even when the DH is a little late arriving for the pediatric visit, parents refuse to leave until the child has been seen by the DH. This was considered evidence of parental engagement with the importance of the oral exam. Informants commented that when the oral health service is supported by the pediatrician, is designed to be patient centered, and is strategically placed in service delivery, parents gain the awareness that attention to oral health is important.

Informants also discussed integration of services for adults. Case study participants commented that clinic staff were oriented to think about ways to help patients establish a comprehensive health home. In their opinions, if staff embrace the concept that all aspects of health are important and essential to achieving good outcomes, the care that is provided by them will convey that concept to patients. Informants commented on the importance of working continually and consistently to effect strategies to integrate care delivery across disciplines.

Referrals to primary care providers from the dental clinic were mostly for adults. If a patient has an infection or an oral abnormality (eg, oral herpes), the patient is referred to a primary care provider. Blood pressure is monitored in the dental clinic before use of anesthetic agents and, if elevated, the dental

service might be refused and the patient referred to primary care. Diabetes is another diagnosis that results in referrals back to primary care. When dental patients have no primary care provider, the dentist will suggest a visit to the primary care clinic and facilitate scheduling an appointment with a provider. Conversely, the pediatric and primary care practices at the clinic routinely refer children and adults to the dental clinic.

The EHR at the clinic has been integrated since 2012 and includes primary care, oral health, and behavioral health modules. The integration of the EHR enables dental providers to review patients' allergies and medical histories, allowing for more comprehensive dental examinations.

Innovations in Workforce

UCFS sponsors a mobile oral health program, Smiles on the Move, in 39 public schools in the local area. The program started 25 years ago. In Connecticut, DHs are permitted to provide services under the general supervision of dentists and to practice in public health settings, including day care centers, Head Start programs, and schools. DHs in the mobile program use portable equipment to provide prophylaxis, x-rays, sealants, and fluoride varnish services to eligible children, effecting referral back to the clinic when treatment services are needed. A recent change in regulations in the Connecticut Medicaid program now permits DHs to provide separate oral health screening and assessment services for children. One of the DHs in the program works full time in the 39 schools and 5 day care centers located in the 12-town geographic catchment area. Dental records for all children in the school program reside in the clinic's EHR, with each record flagged to indicate that the child is a patient in the mobile program. During the 2012 school year DHs provided services to 829 children; 188 (23%) were in need of further treatment services. With grant funding from the state, program staff have placed 10,000 sealants in recent years.

Wayne Memorial Community Health Centers
Honesdale, Pennsylvania

- In 2013 Wayne Memorial Community Health Centers served 15,002 unique medical patients and 5,286 dental patients.
- Wayne Memorial offered dental services for children before it opened its first primary care clinic in 2008.
- The FQHC provides primary care services in its Honesdale, Hamlin, Lake Como, Waymart, Lords Valley, Vandling, and Carbondale, Pennsylvania clinics and dental services in Honesdale and Lords Valley, Pennsylvania.
- Ninety-six percent of patients are White and 77.4% are at or below 200% FPL, with 54% at or below 100% FPL.
- About 60% of patients are in a Medicaid-funded insurance plan (fee for service or managed care) and between 25% and 30% have commercial third-party insurance.

Wayne Memorial Community Health Centers began in 1998 as a health foundation that provided dental services for underserved children. It was recognized as an FQHC in 2007 and opened its first primary care clinic in Honesdale in January 2008. At that time, the dental clinic included 4 dental operatories, which grew quickly to 6 as demand increased and as adult dental services were added. The Honesdale health center currently houses 3 clinics: the Honesdale Family Health Center, the Together for Health Dental Center, and Wayne Memorial Behavioral Health. Wayne County, in which the FQHC is located, has a lower number of dentists than the average county in the state.

The FQHC is the only dental provider in the county that participates with the state Medicaid program. However, private-practice dentists in the county are willing to take referrals from the school-based oral health programs managed by the FQHC.

The Medicaid insurance program in Pennsylvania is called HealthChoices. Coverage options in the Pennsylvania Medicaid program were in flux after a change in governors that resulted in changes to Medicaid policy in 2014. Beginning in 2015, Pennsylvania expanded Medicaid eligibility to include all individuals and families at or below 138% FPL. Pennsylvania Medicaid provides all enrollees with the same benefits, regardless of qualifying income level, but with some categorical exceptions. These categorical exceptions include pregnant women, who are eligible for Medicaid with income at a higher percent of FPL and also qualify for more benefits, especially for expanded dental services, than other Medicaid-eligible populations in Pennsylvania. Several managed care insurance plans are contracted to HealthChoices and offer policies that integrate dental coverage, transportation to medical appointments, some behavioral health services, and dialysis treatments with covered medical services. The adult dental benefit in Medicaid is limited and generally excludes root canals, crowns, and extensive periodontal services.

The FQHC receives a negotiated PPS rate for dental services rendered to Medicaid-eligible people. However, with the transfer of Medicaid coverage to MCO administration, the clinic is now billing MCO insurers directly and receiving managed care reimbursement rates. The state reconciles the difference between the MCO payment and the PPS rate with wraparound payments to the FQHC.

The area surrounding the FQHC is rural. County transportation is available for medical appointments and is free to Medicaid-eligible populations and at a reduced rate to other low-income residents. The FQHC is part of the Keystone Accountable Care Organization, which is made up of several hospitals, physician groups, and other provider organizations located in a broad geographic catchment area that includes Scranton and Wilkes-Barre, Pennsylvania.

Dental Services at Wayne Memorial Community Health Center

During the early years, when the FQHC only provided services to children, it employed 2 dentists, 1 of whom was a pediatric dentist, and 1 DH. The Together for Health Dental Center in Honesdale currently consists of 10 operatories (6 dental and 4 dental hygiene operatories). The Pike Dental Clinic in Lords Valley has 5 operatories, 2 of which are built for flexible use by either a dentist or a DH.

The FQHC employs 4 full-time and 3 part-time dentists. Two of the part-time dentists are in private practice locally and 1 is semi-retired. Many FQHCs are engaging private-practice dentists for work in the safety net on a part-time basis. This is an arrangement that permits private-practice dentists to contribute to care for the underserved without also assuming the administrative burdens associated with participation in public insurance programs. Dental staff also includes 4 DHs, some of whom are qualified as public health dental hygiene practitioners (PHDHPs.) One of the PHDHPs is also a community dental health coordinator (CDHC). In addition, the FQHC employs 6 DAs, with some qualified in expanded functions, and numerous administrative staff. The main dental clinic is open 6 days a week and maintains evening hours on Mondays and Wednesdays. The clinic in Lords Valley is open every weekday and has evening hours on Thursdays.

Approximately half of the more than 5,200 unique dental patients are also medical patients receiving primary care services at the FQHC. Demand for dental services is high, and the waiting rooms in the clinics are often full. Dental complaints related to pain and infection are among the third or fourth most common reasons for seeking care at hospital EDs in the local area. The local population is not always aware of the services available at the dental clinics of the FQHC, with some people first learning about the clinics when they are referred to them by a hospital ED.

Informants commented on a high no-show rate among scheduled patients in the dental clinics, especially among newer patients, and often during evening or weekend clinic hours. The FQHC had structured a no-show policy that triggered patient discharge for 24 months after 3 no shows at the clinic. When discharged, dental patients were not allowed to schedule appointments for 30 days but were able to access dental services on an emergency basis, which required the patient to wait with other emergency patients to be accommodated.

Another strategy introduced by the FQHC to reduce no-show rates is to not book patients for preventive visits following an emergency visit. An analysis of clinic data showed high no-show rates following emergency visits; thus, the development of the aforementioned policy. Oral health professionals discussed this change in their orientation to prevention. Instead of forcing patients to schedule hygiene services, which ultimately impacts compliance, clinic staff make an effort to educate patients to better understand that prevention is part of a comprehensive dental plan and encourage patients to voluntarily

schedule dental hygiene services. Another strategy to maximize use of the DHs in the clinics is to double-book some appointments each day to prevent empty chairs. The FQHC has been able to build interest among patients in oral hygiene prevention services by providing community education programs in a number of venues that emphasize the importance of establishing a dental home. The PHDHP/ CDHC attends school health fairs and other community events, including diabetes education programs, to educate local groups about oral health and its relationship to systemic well-being.

Use of Innovative Workforce at Wayne Memorial Community Health Centers

The innovative oral health workforce models enabled in Pennsylvania are being used by the FQHC to enhance efficiencies in the dental clinics, to improve outreach to the community, and to increase access to oral health services. The PHDHP in Pennsylvania is permitted to perform dental hygiene services in schools, correctional facilities, health care facilities, nursing care facilities, FQHCs and other nonprofit health clinics, and other public settings without prior authorization or assignment of a dentist. The CDHC in Pennsylvania is trained in a community health paradigm to provide oral health and disease prevention education using motivational interviewing techniques. Wayne Memorial employs DHs who are qualified as PHDHPs and 1 who is both a PHDHP and a CDHC. The PHDHP/CDHC mainly spends time in the community, at community health fairs, and at primary care practices doing outreach and case finding and providing primary preventive and prophylactic services.

Clinic staff spoke of the benefits of the versatility in these workforce models and how they enable greater efficiencies in delivering services. Dental clinic staff are oriented toward team-based care using the proficiencies of all team professionals to maximize capacity to meet the oral health needs of patients. One dentist spoke of using both the DHs qualified to provide local anesthesia and the EFDAs in the clinic. When a patient is scheduled for a restorative treatment, a qualified DH prepares the patient and administers local anesthesia so that the treating dentist can cut the tooth. An EFDA then places and carves the amalgam to complete the restoration. Using these competencies improves workflows in the clinic and permits a greater volume of services.

The PHDHP/CDHC discussed the importance of having a clinical presence in settings other than dental clinics and about engaging and listening to patients with an accepting attitude. She emphasized the importance of delivering oral health education in a meaningful way so that listeners attend. One example was a presentation to a seventh-grade class where she found it useful to present pictures of patients with advanced dental disease because the middle schoolers found the results of poor hygiene impressive. Teaching about the impact of soft drinks on teeth and the importance of wearing mouthguards during sporting activities resonated with the students.

Integration of Primary Care and Oral Health Services

All patients who are seen for dental treatments in the dental clinics at the FQHC provide a medical history, and each patient's blood pressure is taken and recorded. If a reading is questionable, the patient is referred to the primary care practice at the FQHC. Another tangible example of efforts to integrate care is that the Women's Health Clinic at Wayne Memorial refers obstetrical patients to the dental clinic for preventive and needed restorative services. Pregnant women in Pennsylvania have a full dental benefit through HealthChoices, and receiving oral health screening and treatment services during pregnancy is considered important to ensuring good outcomes.

The PHDHP/CDHC provides services in the offices of the primary care practices affiliated with Wayne Memorial Community Health Centers using portable equipment to assess patients' oral health needs and to provide preventive services to those primary care patients who do not have a preexisting dental home. Medical clinicians perform preliminary oral health assessments and schedule patients for services on the days the PHDHP/CDHC is scheduled to be on-site. The PHDHP/CDHC treats adults and children in these medical settings and refers new patients to the dental clinic for more extensive procedures. As an example of how this benefits patients, the PHDHP/CDHC explained that she had recently treated a family of 6 in a primary care practice that had been without any oral health services for a significant period. In another instance, the primary care physician asked the PHDHP/CDHC to assess a patient with diabetes who was complaining of a toothache and had been unable to eat for several days. The physician was especially concerned about the nutritional status of the patient because of the diabetes. The PHDHP/CDHC used a portable x-ray machine to reveal serious tooth decay. The PHDHP/CDHC arranged for an appointment at the dental clinic for treatment the following day.

Appendix B

OHWRC
Oral Health Workforce Research Center

Case Study of FQHCs

Conducted by:
The Oral Health Workforce Research Center
at
The Center for Health Workforce Studies
University at Albany, School of Public Health
1 University Place, Suite 220
Rensselaer, New York 12144

Contact: Margaret Langelier (margaret.langelier@health.ny.gov)

Thank you for agreeing to participate in the case study of oral health services delivery in FQHCs across the United States. Your FQHC was selected because of its oral health services delivery model or its use of innovative technology or innovative oral health workforce configurations. The case study will include an on-site visit of 2 researchers from the National Oral Health Workforce Research Center, Jean Moore and Margaret Langelier. The study will include individual or group interviews of as many of the following stakeholders in your organization as possible:

- The chief executive and/or operating officer and/or financial officer
- The medical director
- The dental director
- Direct care providers, including physicians, nurse practitioners, physician assistants, or registered nurses providing oral health assessment and fluoride varnish services
- Dentists and dental hygienists providing services in the clinic, in community settings, or in collaborative projects
- Others identified as informed stakeholders by the FQHC

The interviews will take 30 minutes or longer and will be scheduled to accommodate work schedules. The following questions will guide the interviews. However, only some of the questions will be addressed in every interview as the protocol is lengthy and may not apply to all informants.

Case Study Questions for FQHCs Using Innovative Oral Health Workforce Models

This case study is being conducted to inform a review of oral health workforce innovations in FQHCs across the United States, to describe barriers to access to oral health, and to recommend pathways to increased access to dental care. 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 Health Resources and Services Administration (HRSA). The OHWRC has also partnered with members of a research team from the Center for the Health Professions at the University of California, San Francisco, to complete the work. This interview is voluntary and with your consent and will take approximately 45 minutes to 1 hour to complete. If this interview is conducted in a group, it will take approximately 2 hours 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 report will describe oral health services delivery in the FQHC, the team delivering oral health care to patients, the integration of oral health services with other health services delivery, and the impact of innovative oral health workforce or service delivery models on access to care for clinic patients. The report will provide no information that could be specifically linked to you. 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 FQHCs participating in the research. The report will include a series of briefs specifically describing oral health services delivery in each of the FQHCs participating in the project. It will also contain a summary chapter that discusses common themes from the interviews and describes novel or innovative solutions to achieve increased access to dental services in community health clinics.

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

Questions:

Access to oral health services for the patient community

Do your patients experience difficulties accessing oral health services in the community? If yes, what are the barriers to establishing a dental home in the local community?

In your opinion, what are the most important factors that limit access to routine, acute, or emergency oral health services for your patients?

In your opinion, is a low level of oral health literacy an important factor in determining utilization patterns and if so, how do you think the level of oral health literacy might be increased?

Oral health services provided in the FQHC

Do medical professionals in the FQHC provide any oral health screening, assessment, or preventive services? What professionals are providing these services? Have they had any special training in oral health screening and/ or in identifying oral disease? Do medical professionals refer patients for dental services? How are referrals to dental providers managed by FQHC administrative staff?

Does the FQHC provide oral health services in house? If so, what services are provided and what services are referred to community dentists?

Are medical and dental services collocated in any of the clinics? If medical and dental services are collocated, what are the particular advantages or disadvantages to shared clinic space?

In how many locations does the FQHC provide oral health services to patients? How many dental and/or dental hygiene operatories are in the FQHC dental clinic(s)? Is there anticipated need for physical expansion of the dental clinics or an increase in the number or oral health professionals employed by the FQHC?

Is the FQHC affiliated with a school-based oral health program or a mobile dental program? If yes, please discuss provision of oral health care in these settings.

On average, how many patients receive oral health services from the FQHC in a typical month? Describe the kinds of services and their apportionment (eg, preventive, restorative).

What portion of oral health services provided in the FQHC are provided to children? To adults? Do the services generally provided to adults differ from those generally provided to children?

What is the wait time for a routine dental appointment? For an emergency dental appointment? What percentage of available appointment time is used to treat patients? Is there a problem with no shows for appointments, and if so, how is this managed?

Are there barriers to provision of oral health services in the FQHC? Describe those barriers. How has the FQHC managed to overcome these impediments?

How are oral health services reimbursed? What portion of dental revenue is from the state Medicaid program and what portion is from commercial insurance or self-pay patients?

How does the APG or PPS payment methodology for FQHCs affect the provision of oral health services? Has the state considered moving Medicaid dental coverage to managed care auspices and if so, what is or will be the impacts on the FQHC?

Electronic Health Record

Do dental providers use the same EHR as the medical providers in the FQHC? How does use of the EHR impact coordination of care and referrals for care? What is the impact of an EHR on oral health service delivery?

Community Collaborations

Does the FQHC collaborate with other community providers or organizations in delivery of oral health services? Please elaborate on any collaborations or consortiums with a focus on oral health. How are these managed and funded and who is the target audience for the community initiative?

Oral Health Workforce

Describe the oral health care delivery team in the FQHC. Does the FQHC employ oral health professionals? If so, please describe those professionals and their full- or part-time employment status. Please describe any past or current issues with recruitment or retention of oral health professionals for employment at the FQHC.

(If Applicable) This FQHC employs (eg, a public health dental hygienist or a dental therapist or an extended function dental assistant, or dental residents and externs, etc.). What factors contributed to the decision to employ this type of professional?

What are the roles and functions of this/these professionals? How do these professionals interface with other oral health professionals on the care delivery team?

What particular expertise of this type of professional is especially appealing to the clinic's strategies to improve oral health service delivery?

Has this new or expanded professional role had an impact on access to care for your patients? If yes, describe the impacts on your patients and on the FQHC's ability to deliver oral health care services? Please describe changes in clinic routines or arrangements that were necessary to integrate the new workforce model.

Do these professionals provide reimbursable oral health services? If yes, does revenue from the services delivered by these professionals cover their cost? If no, do you receive grant funds or other money to support these services? Has this innovation been cost effective? Explain.

Have data collected on utilization of services or patients' oral health outcomes shown the effect of differences in oral health services delivery before and after this model of care delivery was instituted?

Is there anything about innovation in oral health services delivery in the FQHC that we have not discussed that is important for us to obtain a better understanding of the impact of change on oral health utilization or patient outcomes in the FQHC?

(If Applicable) **For School-Based Oral Health Programs Only**

What is the organizational affiliation of the school-based oral health program and the FQHC? What types of oral health professionals staff the school-based program?

Are staff working in the school-based program employees of the FQHC?

What is their employment status (full time or part time)?

How is the school-based oral health program funded (including salaries, equipment, and supplies)? Is the program self-sustaining?

How are oral health services in the school-based program delivered (eg, portable operatories, mobile dental van)?

Are particular age groups or cohorts (eg, third-grade students) targeted in the school-based program? What percentage of students are treated and receive follow-up services each year?

What types of oral health services are provided to students? What percentage of the services provided are for screening and education? Is fluoride varnish or sealant application available to students? And what percentage of students receive a prophylactic service? Are dental hygienists working in school-based oral health programs permitted to provide atraumatic or temporary restorative services?

What is the level of dental supervision required in school-based oral health programs in the state?

How are referrals to dentists effected? Are referrals made to dentists at the sponsoring FQHC or to dentists in the community or both? Does the school-based program have any formal agreements with community dentists about accepting dental referrals?

How many schools are visited annually? How many students receive any oral health service?

Are there limitations in state regulations about the characteristics of students (eg, no visit to a dentist in the last year) who can receive oral health services through the school-based program?

What are the major barriers to expansion of the school-based oral health program?

In your opinion, have services provided by oral health professionals through the school-based program had an impact on oral health outcomes of students? Are there available data to show these outcomes?

If you have any questions about this interview at any time, please contact me (Margaret Langelier) at margaret.langelier@health.ny.gov or by phone at (518) 402-0250. If you have questions about your participation as a research subject, you may contact Tony Watson, New York State Department of Health, Institutional Review Board, (519) 474-8539 or via email at tony.watson@health.ny.gov.

REFERENCES

1. Ballweg R, Berg J, DeRouen T, Fiste L, Mouradian W, Somerman MJ. Expanding dental education partnerships beyond the four walls. *J Dent Educ*. 2011;75(3):300-309.

2. Primary care: the health center program. Authorizing Legislation. Section 330 of the Public Health Service Act. U.S. Department of Health and Human Services, Health Resources and Services Administration website. http://bphc.hrsa.gov/policiesregulations/legislation/authorizing330.pdf. Accessed September 18, 2015.

3. Edelstein B. The dental safety net, its workforce, and policy recommendations for its enhancement. *J Public Health Dent*. 2010;70:S32-S39.

4. Institute of Medicine and National Research Council. *Improving access to oral health care for vulnerable and underserved populations*. Washington, DC. The National Academies Press; 2011.

5. 2014 Health Center Profile: Health Center Program Grantee Profiles. Rockville, MD: Health Resources and Services Administration; 2014. http://bphc.hrsa.gov/uds/datacenter.aspx?q=d. Accessed August 25, 2015.

6. Glassman P, Harrington M, Mertz E, Namakian M. The virtual dental home: implications for policy and strategy. *J Calif Dent Assoc*. 2012;40(7):605-611.

7. American Dental Association. Employment of dental practice personnel: selected 2012 results from the Survey of Dental Practice. http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/ADA-Dental-Practice-Survey_Employment-of-Dental-Pr.ashx. Accessed September 18, 2015.

8. Maciag M. By the numbers new census estimates show areas growing oldest the fastest. *Governing*. http://www.governing.com/blogs/by-the-numbers/fastest-growing-65-older-population-census-data.html. Published June 13, 2013. Accessed August 25, 2015.

9. Bureau of Primary Health Care [fact sheet]. Rockville, MD: Health Resources and Services Administration; August 11, 2015. http://bphc.hrsa.gov/about/healthcenterfactsheet.pdf. Accessed August 25, 2015.

10. 2013 health center profile: South County Community Health Center, Inc. Health Resources and Services Administration website. http://bphc.hrsa.gov/uds/datacenter.aspx?q=d&bid=098150&state=CA&year=2013. Accessed August 25, 2015.

11. Ravenswood Family Health Center. Annual report 2013. http://www.ravenswoodfhc.org/images/pdf/2013_Annual_Report_1.pdf. Published April 15, 2014. Accessed August 25, 2015.

12. Wides C, Alam SR, Mertz E. Shaking up the dental safety-net: elimination of optional adult dental Medicaid benefits in California. *J Health Care Poor Underserved*. 2014;25(supp 1):151-164.

13. Child Health and Disability Prevention Program. California Department of Health Care Services website. http://www.dhcs.ca.gov/services/chdp/Pages/default.aspx. Accessed August 25, 2015.

14. Glassman P, Harrington M, Mertz E, Namakian M. The virtual dental home: implications for policy and strategy. *J Calif Dent Assoc*. 2012;40(7):605-111.

15. California teledentistry bill signed into law by Governor Brown [news release]. San Francisco, CA: University of the Pacific, Arthur A. Dugoni School of Dentistry; October 2, 2014. http://dental.pacific.edu/News_and_Events/News_Archive/California_Teledentistry_Bill_Signed_Into_Law_by_Governor_Brown.html. Accessed August 25, 2015.

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