



An Assessment of Mobile and Portable Dentistry Programs to Improve Population Oral Health

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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 assess the contributions of mobile and portable dentistry programs to increased access to oral health services. The project used a qualitative methodology and included case studies of 7 organizations across the United States that were providing oral health services in a mobile or portable format.

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The mission of OHWRC is to provide accurate and policy-relevant research on the impact of the oral health workforce on oral health outcomes. The research conducted by OHWRC informs strategies designed to increase access to oral health services for vulnerable populations. OHWRC is based at CHWS at the School of Public Health, University at Albany, State University of New York (SUNY), and is the only HRSA-sponsored research center with a unique focus on the oral health workforce.

The views expressed in this report are those of OHWRC and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY, or other subcontractors.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	1
TECHNICAL REPORT.....	17
BACKGROUND.....	18
STUDY DESIGN.....	20
FINDINGS.....	22
Literature Review.....	22
Regulation.....	24
Findings From the Case Studies.....	25
DISCUSSION.....	39
APPENDIX A (Case Studies).....	43
APPENDIX B (Interview Questions).....	113
APPENDIX C (Annotated Bibliography).....	119
APPENDIX D (State Laws and Regulations).....	127
REFERENCES.....	181

BACKGROUND

While mobile and portable dental programs are considered a relatively recent strategy to improve access to oral health services, their beginnings actually date to the itinerant origins of dentistry and more formally to Dr Albert Fones and the first dental hygienists. Dental hygienists were trained as early as 1914 to provide preventive and educational oral health services to children in schools to reduce rates of dental caries.

The volume and variety of mobile and portable oral health programs in the United States has increased over the past century, with school-based and school-affiliated oral health programs now commonplace in high-need communities, including rural areas and poorer urban neighborhoods. Increasingly capable portable imaging technologies and treatment modalities have evolved to enable oral health professionals to provide a range of oral health services in public facilities and other community settings using portable equipment or in mobile vans equipped with fixed dental suites.

Although mobile and portable oral health programs initially focused on children in schools and Head Start programs, many now serve adults and the elderly, especially those in nursing homes or with unstable housing, those with developmental disabilities or other special needs, those with limited transportation, and those who otherwise lack access to private dental practices. Providing preventive and basic restorative oral health services in the community enables oral health professionals to triage patients, conduct risk assessments, and further refer patients for treatment and therapeutic services for more complex conditions. Mobile and portable oral health programs also provide the opportunity to manage periodic preventive care in order to limit the progression of oral disease, especially for vulnerable populations. This, in turn, increases the available capacity in fixed dental clinics and private practices to attend to patients with more complex dental needs.

The configurations of mobile and portable oral health programs vary, with some providing only assessment, education, and fluoride varnish services, while others are sealant focused or provide a range of preventive and basic restorative services. As the number of programs and the diversity of sponsorship have grown in recent years, states have commensurately increased efforts to regulate these programs. Concerns have arisen among some policymakers and public advocates about the absence of appropriate linkages between portable/mobile oral health programs and established dental providers, including safety net providers, in local communities. For many states, an important focus of regulations governing portable programs is ensuring that oral health follow-up services for patients in need of further treatment are part of the plan of care.

Sponsors of mobile and portable oral health services include not-for-profit community organizations and consortia, community foundations, local and state health departments, federally qualified health centers (FQHCs), oral health professions education programs, and for-profit dental service organizations. Many of these programs are supported by a broad range of community resources and partnerships. In 2013, 80% of state Medicaid programs reimbursed for dental services provided by mobile dental programs, and 61% reimbursed for dental services in school-based settings. Some states also fund programs that operate in schools to provide sealants and fluoride varnishes at no cost to participating families.

STUDY DESIGN

Hypothesis, Design, and Analysis

The main hypothesis for this research was that mobile and portable oral health services are useful in geographic areas and for population groups where the penetration of dental practices or dental participation in Medicaid is low. This qualitative study examined peer-reviewed literature on mobile and portable dentistry and inventoried state-specific regulations governing these programs. Researchers also conducted case studies of 7 mobile and portable dentistry programs across the US to describe their value to underserved populations and to identify the facilitators of and barriers to the provision of effective portable oral health services.

This report:

- Describes the various structural configurations of portable and mobile oral health service delivery programs, including emerging models and applications
- Discusses the various populations targeted for services by these programs
- Details regulatory variation by state for mobile and portable dentistry programs
- Examines, where possible, the outcomes of early and ongoing preventive interventions through portable dentistry in underserved communities

Case Studies of 7 Mobile and Portable Oral Health Programs

In the late winter and spring of 2017, project staff from the OHWRC conducted case studies of 7 organizations providing mobile and portable dentistry services across the US. The organizations that participated in the study were:

- *Access Dental Care* headquartered in Asheboro, North Carolina
- *Eastman Institute for Oral Health* headquartered in Rochester, New York
- *Future Smiles* headquartered in Las Vegas, Nevada
- *Health Promotion Specialists* headquartered in Lexington, South Carolina
- *Jordan Valley Community Health Center* headquartered in Springfield, Missouri
- *Northeast Mobile Dental Services* headquartered in Derry, New Hampshire
- *St. David's Foundation* headquartered in Austin, Texas

These organizations were chosen to demonstrate:

- The variety of settings in which oral health services are delivered
- The mix of patient populations served by these programs
- The differences in local need for oral health services that affect the design and delivery of mobile and portable oral health services
- The variety of funding mechanisms that support these service delivery methods

Case study participants were selected variously. Some case study participants were identified with the advice of the Mobile Health Clinics Association. Others were found through peer-reviewed literature published on the subject. Many have a national reputation for sustained quality and impact on their target populations.

Case study participants were provided with a protocol of questions to guide the case study interview process. However, it was determined that the interviews should be generally unstructured to allow informants to discuss oral health service delivery in their organization from their personal perspectives. The questions in the protocol were used as a guide to major topics of interest.

The New York State Department of Health's Institutional Review Board reviewed and approved this study prior to its conduct.

FINDINGS

Regulation

Project staff conducted a state-by-state review of laws and regulations governing mobile and portable dentistry programs in the US. It appears that as the number of these programs has increased across the nation, there has been a commensurate increase in the attention of regulatory bodies to providing parameters for their conduct. Thus, legislative and regulatory activity relative to mobile and portable dentistry has increased in recent years. The review of state law found that the majority of states still do not address mobile and portable dentistry to any noticeable extent in existing codes. However, at least 20 states have effected some rules or laws impacting the operations of these programs.

Fundamental differences in equipment and scope of services between mobile dental vans and portable programs might lead regulators to attend mainly to mobile dental vans, where equipment and services tend to be more extensive. However, most states that regulate do so conjointly, including both mobile and portable programs in basic common requirements while addressing the unique aspects of each modality in specific sections of law or regulation. Laws and rules governing these modalities are generally placed as coda to existing dental or dental hygiene practice acts or associated professional regulations; some program requirements are found in laws governing health facilities or schools. Medicaid law also addresses care provided in mobile and portable formats, making them reimbursable services. A detailed description of current regulations governing mobile and portable dentistry by state can be found in Appendix D of the technical report for this project.

Findings From the Case Studies

The case studies revealed both notable commonality and significant diversity in program structures and service delivery models among mobile and portable oral health programs. Each sponsoring organization had initiated the portable service delivery model to address an access issue in specific underserved populations or in rural geographies in the catchment area. However, each targeted population was challenged by distinct barriers in their abilities to access oral health services in more traditional clinical settings, which required individual program design and select partnerships to effect service delivery. While there was certainly uniformity in the reasons motivating use of these alternative modalities for delivering oral health services, each organization differed from the others in some aspect of their mobile/portable programs.

An important finding from the case studies was that mobile and portable oral health service delivery is appropriate as a means to:

- Increase oral health literacy in targeted populations
- Enable access to both preventive and treatment services
- Enable patients to establish a dental home in their local communities
- Address extensive unmet need for oral health services in a variety of underserved populations

While these programs are obviously suitable to reach children in schools, as demonstrated by emerging data on such programs, mobile and portable dentistry programs are also positioned to address the oral health service needs of confined elders; medically fragile or medically complex populations; marginalized populations, including the homeless and those with chronic infectious disease; rural residents; and others.

The following themes were developed from the information provided by case study participants. These themes describe pivotal commonalities among mobile and portable dentistry programs across the US. Each of the themes in the list is further elaborated in the paragraphs that follow. The distinctive characteristics of the various service providers also are discussed. The words “mobile” and “portable” and “oral health” and “dental” may be used interchangeably in the discussion of themes. Full descriptive briefs for all of the case study organizations are available in Appendix A of the technical report. The interview protocol for the case studies is available in Appendix B.

Common Themes

These mobile and portable dentistry programs were similar in many ways. The following were key common themes:

- **Mobile dental vans and portable oral health programs are equipped to supply an array of dental services.**
- **The scope of services provided in mobile and portable dentistry programs ranges from preventive services to a full complement of dental treatment services.**
- **Mobile and portable dentistry programs have grown organically to meet the needs of particular populations or geographic areas for oral health services.**

- Mobile and portable dentistry programs represent a response by local providers and organizations to unmet need for oral health services in communities of interest.
- The geographic locations and patient populations served by mobile and portable dentistry programs may change in response to shifting need.
- Mobile and portable dentistry programs are an integral part of the dental home.
- Mobile and portable dentistry programs reconcile service availability with the uneven distribution of dental providers in certain geographic areas or for particular populations.
- Mobile and portable dentistry programs are supported by various funding sources.
- Mobile and portable dentistry programs are an effective means of integrating oral health services into primary care environments.
- Mobile and portable service delivery results in the building of strong oral health care teams.

Mobile dental vans and portable oral health programs are equipped to supply an array of dental services.

The procedure-oriented nature of dental practice suggests that oral health services are not as portable as other health services. A traditional dental operator is equipped with special lighting, clean water sources, an array of tools and supplies used throughout the treatment day, and imaging technology and sterilization equipment for infection control. This differs from many medical examination suites, which are generally sparsely equipped with only a sphygmomanometer to monitor blood pressure, a thermometer, and other basic items. Medical services are more often consultative and examination focused and thus generally more easily provided in nontraditional settings than are dental services. These case studies revealed that innovative technology, combined with human inspiration, have resulted in the ability of mobile oral health programs to replicate dental operatories in myriad locations using portable and fixed equipment to accommodate a range of patient needs.

Portable lighting, portable chairs, portable imaging equipment, and portable sterilization equipment were universally available. Supply cabinets or storage tubs were efficiently equipped with necessary dental instruments, gloves, masks, and even “goody bags” for children. The necessary technology for providing services was also suitably sized for portability, including laptops, vacuum and suction equipment, x-ray technology, and intraoral cameras.

Mobile dental vans were equipped with fixed dental operatories equivalent to any dental suite. Many of these vans held imaging equipment; some even had Panorex x-ray technology installed onboard. Electronic dental records were maintained on laptops and iPads with wireless hotspots; many providers used cloud-based storage so that patient records were available from any location where staff were providing services.

The scope of services provided in mobile and portable dentistry programs ranges from preventive services to a full complement of dental treatment services.

The mobile and portable oral health service programs that participated in these case studies universally offered screening, diagnostic, and preventive services; many also offered a range of treatment services including restorations, stainless steel crowns, tooth extractions, and even denture impressions. Offering treatment services obviously depended on whether dentists were actively involved with the dental team staffing the program. Some programs were staffed only by dental hygienists and thus were focused on oral health education and prevention. Others employed a full dental team, including dentists, dental hygienists, dental assistants, and even dental residents, which increased the array of services available to patients.

Mobile and portable dentistry programs have grown organically to meet the needs of particular populations or geographic areas for oral health services.

Each of the mobile and portable dentistry programs visited for the case studies had initiated services in the community of interest on a limited basis to address an identified need. Each had gradually expanded as recognition of greater public need occurred and as resources to support and sustain expansion were identified. This type of incremental, organic growth was necessary to be responsible to the community of stakeholders. Several programs acknowledged the need for expansion to other areas or populations but recognized that current resources would not support further growth. In fact, further expansion might jeopardize services for those already benefiting from the program.

Mobile and portable dentistry programs represent a response by local providers and organizations to unmet need for oral health services in communities of interest.

Case study participants noted that services provided in a mobile or portable format must be responsive to community need. The often-repeated dictum that locally designed solutions to oral health access issues are important was evidenced in the diversity among mobile and portable dentistry programs and their orientations to particular communities of interest. Many sponsoring organizations had completed needs assessments to determine which groups among those living in the catchment area were most in need of oral health services.

All of the target populations served by these programs exhibited some vulnerable qualities due to dependence on others for transportation to dental services or cultural, language, or socioeconomic barriers that decreased access to routine oral health services. Some populations were vulnerable because of homelessness or medical diagnoses that complicated their ability to seek care in traditional health care environments. All encountered some combination of barriers to obtaining services.

The geographic locations and patient populations served by mobile and portable dentistry programs may change in response to shifting need.

Case study informants discussed the importance of frequent re-evaluation of need in targeted population groups or in geographic areas. They emphasized the necessity of continuous and ongoing review to evaluate whether populations currently served were still those in greatest need and to identify emerging or shifting demand for these services in other population groups.

One case study informant commented that shifting need for oral health services in communities served by mobile and portable dentistry programs may be a marker of the success of these programs in terms of helping patients find consistent dental providers to act as dental homes in their communities. The flexibility of mobile and portable dentistry programs allows providers to respond to these shifts in service areas with minimal alteration of infrastructure and staff.

Some mobile and portable dentistry programs are intended to provide an immediate but theoretically temporary solution to lack of access to oral health services in particular communities or for particular populations. Other mobile programs expected from onset to act as an enduring solution for intractable problems with access to oral health services for specific populations. All of these programs directed their activities based on manifest need in their communities of interest.

Mobile and portable dentistry programs are an integral part of the dental home.

Mobile programs in the case studies did not operate in isolation from the formal oral health and health service delivery systems in their catchment areas. Many worked with local dental and health care providers, social service agencies, and community-based organizations with a common interest in and engagement with special populations to coordinate treatment options and to ensure a full continuum of service availability.

The programs that participated in the case studies either themselves constituted a comprehensive dental home for their patients or worked in concert with community stakeholders and local dental providers to identify and establish a dental home for their patients. Mobile dental programs in skilled nursing facilities employing both dentists and dental hygienists were an example of a constituted dental home for patients,

as most necessary services were available onsite. Mobile programs sponsored by FQHCs are often able to offer a comprehensive dental home to their patients in a range of settings including mobile or portable services supplemented by general and specialty dental services in fixed clinics.

For some children, a school oral health program becomes a dental home by default, especially if the child is well maintained with preventive services. A parent's reluctance to engage with a dental provider in the community or parental difficulty with finding a provider willing to accept the child as a patient can necessitate that the school-based program manage care. While this is regrettable from a continuity-of-care perspective, it is also satisfying that preventive interventions can help a child establish and maintain oral health without further need for treatment services.

Mobile and portable dentistry programs reconcile service availability with the uneven distribution of dental providers in certain geographic areas or for particular populations.

It is somewhat redundant to say that mobile programs are a strategy to address an insufficient supply of dentists or a limited supply of providers willing to accept payment for services from a state Medicaid program. Obviously, portable programming would not be needed if the fixed delivery system was adequate to meet demand for oral health services.

The driving force for most mobile and portable dental services is either to complement a system of care that effectively excludes a population (eg, the Medicaid insured) or to supplement deficient community resources. Most portable programs are necessary because of a lack of available service providers in a geographic area, a lack of financial resources in a population to purchase any services that are available, or cultural and literacy barriers to oral health services that prevent a particular population from seeking services.

Mobile and portable dentistry programs are supported by various funding sources.

One interesting finding from these case studies was the variety of funding sources that supported mobile and portable oral health programs and the creativity of program sponsors in melding funds to provide services. All case study participants were not-for-profit organizational providers, and many engaged with various community funders as sponsors. Each had cobbled together funding sufficient to support service provision.

Among the case studies, organizations with sustainable funding sources generally remarked on feeling relatively secure in their ability to continue providing services. Organizations that were predominately dependent on Medicaid funding expressed significant concerns about long-term sustainability because of the vagaries related to state budget processes and Medicaid dental benefits. One important finding was

that separate parts of a mobile or portable dentistry program might be funded differently using a mix of retainer fees, reimbursement for services, capitation payments, philanthropy, and grant funding. Diversified funding mechanisms appeared to make the organization more able to absorb deficits in one area of service provision through cost shifting to others resulting in increased organizational stability.

Mobile and portable dentistry programs are an effective means of integrating oral health services into primary care environments.

Another very important finding was the usefulness of mobile and portable dentistry programs as a means of effecting health services integration in medical settings. The case studies revealed that oral health programming is often an ideal bridge to primary medicine and behavioral health services. Several case study participants were working with medical providers and/or social workers in the locations where they were providing oral health services.

Dental hygienists working in school-based or school-linked oral health programs were interfacing with nurses and social workers to identify and manage students in need of oral health services. In some cases, oral health service records were integrated into the student health record. Dentists and dental hygienists in skilled nursing facilities were working in tandem with nursing staff, nurse aides, and medical directors to address oral health care needs in the context of the overall health of nursing home residents. Case study informants discussed ongoing communication about the health status of residents, their medications, and their physical presentations with health care providers in these facilities. Skilled nursing staff and medical directors were aware of the importance of maintaining healthy dentition for their medically complex patients. Medical providers requested dental consults, and dental records were incorporated into each resident's health record.

One particularly interesting example of medical and dental integration was the case study that was conducted in a primary care infectious disease clinic where oral health services were regularly provided to patients. Interactions between medical, dental, and behavioral health providers were routine and necessary because of considerable patient complexity. Concerted efforts by all partners to assure continuity and completeness of care were readily evident in that setting.

Mobile and portable service delivery results in the building of strong oral health care teams.

Another observation garnered from these case studies was the strength of the clinical teams working in these programs, each member of which shared with the others a common and pervasive mission of improving the oral health of patients from underserved populations. The synergy of the core professional teams (consisting of dentists, dental hygienists, and dental assistants, along with office and administrative staff) and their success in utilizing the capabilities and competencies of each member were evident in all

case study locations. These clinical teams functioned in concert to provide quality services in a seamless manner that benefited patients.

The mobile and portable programs that offered both preventive and dental treatment services were staffed by clinical teams inclusive of the range of dental professionals, along with supportive personnel such as social workers, community health workers, and administrative staff and management. Case study participants were respectful of the need for a broad and inclusive service delivery team to help patients surmount barriers to accessing oral health services.

Mobile and portable service providers also associated with various external professionals in the community, forming specific service delivery teams for patients. Efficient service delivery required involvement of support staff, direct care workers, social workers, and medical staff in the various facilities to gain permissions, effect schedules, and communicate with families and caregivers.

DISCUSSION

This study of mobile and portable dentistry programs across the US examined the literature describing the design, implementation, and impacts of such programs and the populations that ultimately benefited from increased access to oral health services. The work also included a review of state laws and regulations governing mobile and portable dentistry programs. The core project activity was the conduct of 7 case studies of nonprofit organizations across the US providing mobile or portable oral health services to populations in their catchment areas.

The use of mobile and portable dentistry services has garnered increasing attention in recent years as a useful and effective means of providing dental services in settings outside of the traditional private practice. While the historical model of delivering dental services in small private practices continues to work well for some populations, service availability or utility of the model for other populations is either variable or inadequate. Mobile and portable dentistry services appear to mediate the structural and financial barriers to access to oral health services experienced by some population groups. It was apparent from the case studies that these programs are now an indispensable part of the continuum of community providers in the formal oral health services delivery system.

The mobile programs participating in the case studies were remarkably successful in their ability to reach “vulnerable” populations, especially those dependent on others to effect appointments and provide transportation. Children, elders living in skilled nursing facilities, and the developmentally disabled participating in day habilitation programs were particular communities found to benefit from the availability of portable dental services. Many other groups were positively impacted by these programs’ outreach efforts, including culturally and linguistically diverse populations, people living in poverty, the homeless, and those with medical complexities and comorbidities that complicated treatment services.

While stakeholders sometimes express concern that mobile programs have the potential to act in isolation from the established delivery system, it was apparent from these case studies that these programs were integrated into local systems of care. These providers and their organizational sponsors recognized the imperative for partnership with the local oral health services delivery system to enable supplemental care for patients that was not possible or not available in a mobile or portable format. In addition, many of the sponsors were offering mobile or portable services as part of a larger dental home. Several of the programs either wholly constituted a dental home or were connected to a provider organization that was able to offer comprehensive dental services. However, it was necessary for programs that offered only preventive services to establish and maintain a dental referral system for patients. These programs used case management to ensure that patients were navigated to appropriate dental providers.

These programs had a symbiotic impact for many local dental providers. Obviously, patients benefited from their presence in the community, but so did the local oral health provider community. The mobile programs benefited from association with dental providers either in the same organization or within mutual target communities, and fixed dental clinics and local dental practices benefited from associations with mobile programs because of new patient referrals.

Mobile and portable programs also were adept at appropriately managing risk in their patient populations. These services enabled some low-risk patients to remain in their communities for educational and preventive services, while those in need of intensive dental services were navigated to appropriate dental providers in local communities.

One especially important finding from this study was the opportunity for mobile and portable dentistry programs to foster the integration of health and oral health care services to realize comprehensive health homes for patients. The case studies offered several examples of portable oral health programs that were integrated into a medical system of care involving constant interchange between professionals from various health disciplines to effect services and improve health outcomes for their mutual patients. Dentists and dental hygienists in skilled nursing facilities worked with direct care nursing staff and medical directors to improve or maintain the overall health of facility residents. School nurses and dental hygienists worked together to ensure that children received the oral health care needed to have healthy mouths. The mobile dentistry program that located in a primary care clinic for infectious disease patients was part of a holistic system of care that involved coordination and case management to the benefit of the high-risk population seen in that clinic.

Another illuminating finding from this investigation is that funding streams for these programs vary. Mobile dental vans are costly both to outfit and to maintain, and revenue from services to uninsured or publicly insured patients served by the vans does not fully cover the expense. Many of the programs depended on philanthropy for sustainability or were harvesting funds from various sources to maintain financial viability. Portable programs, while requiring less capital-intense investment than mobile vans, are often heavily dependent on revenue from services provided to Medicaid-enrolled patients. Public funding for dental services is decreasing in many states, which is potentially threatening to the long-term sustainability of these important programs.

The increasing numbers of providers of mobile and portable dentistry services across the nation suggest increasing recognition of their importance as effective strategies to improve oral health outcomes in the US population. The benefits of these programs, which include facilitating access to services and improving oral health management for patients, clearly support ongoing integration of mobile and portable modalities into the comprehensive oral health services delivery system.

Technical Report

BACKGROUND

Description and Policy Relevance

While mobile and portable dental programs are considered a relatively recent strategy to improve access to oral health services, their beginnings actually date to the itinerant origins of dentistry and more formally to Dr Albert Fones and the first dental hygienists. Dental hygienists were trained as early as 1914 to provide preventive and educational oral health services to children in schools to reduce rates of dental caries.¹

The volume and variety of mobile and portable oral health programs in the United States has increased over the past century, with school-based and school-affiliated oral health programs now commonplace in high-need communities, including rural areas and poorer urban neighborhoods.¹ Increasingly capable portable imaging technologies and treatment modalities have evolved to enable oral health professionals to provide a range of oral health services in public facilities with portable equipment or in mobile vans equipped with fixed dental suites.

Although mobile and portable oral health programs initially focused on children in schools and Head Start programs, many now serve adults and the elderly, especially those in nursing homes or with unstable housing, those with developmental disabilities or other special needs, those with limited transportation, and those who otherwise lack access to private dental practices. Providing preventive and basic restorative oral health services in the community enables oral health professionals to triage patients, conduct risk assessments, and further refer patients for treatment and therapeutic services for more complex conditions. Mobile and portable oral health programs also provide the opportunity to manage periodic preventive care in order to limit the progression of oral disease, especially for vulnerable populations. This, in turn, increases the available capacity in fixed dental clinics and private practices to attend to patients with more complex dental needs.

The configurations of mobile and portable oral health programs vary, with some providing only assessment, education, and fluoride varnish services, while others are sealant focused or provide a range of preventive and basic restorative services. As the number of programs and the diversity of sponsorship have grown in recent years, states have commensurately increased efforts to regulate these programs. Concerns have arisen among some policymakers and public advocates about the absence of appropriate linkages between portable/mobile oral health programs and established dental providers, including safety net providers, in local communities. For many states, an important focus of regulations governing portable programs is ensuring that oral health follow-up services for patients in need of further treatment are part of the plan of care.

Sponsors of mobile and portable oral health services include not-for-profit community organizations and consortia, community foundations, local and state health departments, federally qualified health centers (FQHCs), oral health professions education programs, and for-profit dental service organizations. Many of these programs are supported by a broad range of community resources and partnerships. In 2013, 80% of state Medicaid programs reimbursed for dental services provided by mobile dental programs, and 61% reimbursed for dental services in school-based settings.² Some states also fund programs that operate in schools to provide sealants and fluoride varnishes at no cost to participating families.

STUDY DESIGN

Hypothesis, Design, and Analysis

The main hypothesis for this research was that mobile and portable oral health services are useful in geographic areas and for population groups where the penetration of dental practices or dental participation in Medicaid is low. This qualitative study examined peer-reviewed literature on mobile and portable dentistry and inventoried state-specific regulations governing these programs. Researchers also conducted case studies of 7 mobile and portable dentistry programs across the US to describe their value to underserved populations and to identify the facilitators of and barriers to the provision of effective portable oral health services.

This report:

- Describes the various structural configurations of portable and mobile oral health service delivery programs, including emerging models and applications
- Discusses the various populations targeted for services by these programs
- Details regulatory variation by state for mobile and portable dentistry programs
- Examines, where possible, the outcomes of early and ongoing preventive interventions through portable dentistry in underserved communities

Case Studies of 7 Mobile and Portable Oral Health Programs

In the late winter and spring of 2017, project staff from the OHWRC conducted case studies of 7 organizations providing mobile and portable dentistry services across the US. The organizations that participated in the study were:

- *Access Dental Care* headquartered in Asheboro, North Carolina
- *Eastman Institute for Oral Health* headquartered in Rochester, New York
- *Future Smiles* headquartered in Las Vegas, Nevada
- *Health Promotion Specialists* headquartered in Lexington, South Carolina
- *Jordan Valley Community Health Center* headquartered in Springfield, Missouri
- *Northeast Mobile Dental Services* headquartered in Derry, New Hampshire
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These organizations were chosen to demonstrate:

- The variety of settings in which oral health services are delivered
- The mix of patient populations served by these programs
- The differences in local need for oral health services that affect the design and delivery of mobile and portable oral health services
- The variety of funding mechanisms that support these service delivery methods

Case study participants were selected variously. Some case study participants were identified with the advice of the Mobile Health Clinics Association. Others were found through peer-reviewed literature published on the subject. Many have a national reputation for sustained quality and impact on their target populations.

Executive leadership and program managers in the organizations of interest were initially solicited to participate in the case studies via email. Once agreement for participation was received, project staff completed a site visit to the sponsoring organization and to a mobile delivery site where services were in progress, whenever this was possible. In one instance, the case study was conducted offsite at a national conference.

Case study participants were provided with a protocol of questions to guide the case study interview process. However, it was determined that the interviews should be generally unstructured to allow informants to discuss oral health service delivery in their organization from their personal perspectives. The questions in the protocol were used as a guide to major topics of interest. A copy of the interview protocol is available in Appendix B of this report.

The New York State Department of Health's Institutional Review Board reviewed and approved this study prior to its conduct.

FINDINGS

Literature Review

The sites at which mobile and portable dentistry programs most frequently deliver services appear to be schools, especially elementary schools in which a threshold percentage of children (typically about 50%) are enrolled in the federally sponsored free and reduced-fee lunch program. A child's eligibility for the program is keyed to family income at or below 185% of the federal poverty level or to a particular categorical need. Others who qualify by categorical circumstance include foster children, children in Head Start or Migrant Education programs, and children eligible for services under the Runaway and Homeless Youth Act.³

Children living in poverty are often at higher risk for poor oral health for a number of social, economic, and demographic reasons. Approximately 80% of untreated dental caries are found in 25% of school-aged children, many of whom are from low-income families.⁴ Targeting schools with a high percentage of children eligible for the federal lunch program is a strategy to reduce unmet need for oral health services among these children. Introducing children to routine oral health care at an early age also is a strategy to improve oral health outcomes over their lifetimes.

Advocates of school-based oral health programs cite the Surgeon General's Report on Oral Health to illustrate the impact of poor oral health on children, the consequences of which can include chronic pain, impaired nutrition, difficulty speaking, and an inability to concentrate on learning.⁵ Poor oral health among children is also a leading cause of absenteeism, resulting in approximately 51 million school hours lost each year. Absenteeism has an additional public impact in states in which public school funding is linked to daily attendance counts; thus, there is a public incentive to improve attendance at school. Participation in school-linked and school-based health and oral health programs is an active strategy to address avoidable health and dental conditions that result in missed days of school.

The School-Based Health Alliance conducts a survey of school-based, school-linked, mobile health, and telehealth programs every 3 years.⁶ The most recent census of the 2,315 health centers serving students in their school communities in 49 states was conducted between 2013 and 2014. North Dakota is the only state without school-based or school-linked health entities. The survey response rate was 82.1%. The number of health centers had grown about 20% (385 new centers) since the previous census in 2010 and 2011. School-based health centers were found in public and private schools, magnet and charter schools, and vocational and alternative schools at all grade levels.

Ninety-four percent of these health centers were school based, 3.0% were mobile health centers, 2.7% were school linked, and 0.2% were telehealth only. More than half of these centers (55.9%) served other populations in addition to enrolled students, including students from other schools, families of enrolled children, out-of-school youth, and faculty. More than one-third (35.5%) served other people in their communities. Health centers in rural areas were more likely to serve other populations in addition to students (68.0%) than health centers in suburban areas (62.3%) or those in urban areas (46.3%).

The survey found that many of the primary care providers in school-based health centers were providing oral health services, including oral health education (88.7%), screenings (66.1%), risk assessment (68.5%), fluoride supplements (21.5%), fluoride treatments (17.2%), and sealants (9.7%). In the census, 17.7% of school-based health centers (308) indicated that they had an oral health provider on staff, 19.1% (321 centers) reported that a dentist provided oral health examinations onsite, and 18.0% (303 centers) reported that a dental hygienist provided oral health exams onsite. More than 750 (44.5%) of the school-based health centers were sponsored by an FQHC or a look-alike center; nearly 19% of FQHCs nationally partner with a school to provide these services. Although implementing and sustaining portable programs in schools is challenging, the success of these programs in many communities is remarkable.

One such program, reviewed in the literature, is sponsored by St. David's Foundation in Austin, Texas. The mobile dental van program has been operating since 1998. Between that year and 2006, the mobile dental program provided 132,971 dental screenings and 38,634 dental encounters for either dental sealants or dental treatment services. Over the 8-year period, the program expanded from a single mobile van to 3.⁵ The number of oral health screenings increased from approximately 15,000 in 1998–1999 to 37,383 in 2004–2005; over the same time period, the number of sealants placed increased from 2,449 to 7,409. Since that time, the number of vans used in the program has increased to 9. Each contains 2 dental operatories, digital x-ray equipment, and workstations for van personnel. In 2016, the vans visited 64 schools in the catchment area, screened 27,120 children, and treated 10,940 patients (adults and children) at an average cost of \$886 per patient. All services provided by the program are free to patients; the cost of those services equated to \$11.6 million in free care in 2016.⁷ This program was included in the case studies for this project and is described in detail in Appendix A of this report.

Examples of successful school-linked oral health programs are more readily available in the literature than are examples of portable or mobile dental programs that address the needs of other populations, such as the functionally dependent elderly and homeless populations. Portable and mobile dentistry is useful in reaching the elderly, especially those with mobility issues and those no longer dwelling in the community. While the issue of poor oral health in the population of older Americans is alluded to in the literature, it is likely that concern about the oral health of the elderly will continue to increase with the aging of the “baby boom” population.

The oral health of the elderly is important for many reasons, but especially because of the linkages between poor oral health and systemic disease. Research has found that older adults with 20 or more teeth have a lower mortality rate than those with 19 or fewer teeth.⁸ The presence of oral bacteria due to inadequate oral hygiene in the nursing home population has been linked to aspiration pneumonia in the elderly. Nutritional deficits resulting from difficulty with eating also contribute to declining health status. Thus, oral hygiene and maintenance of existing dentition is essential in older adults.

An annotated bibliography compiling some of the peer-reviewed literature on the topic of mobile and portable dentistry is available in Appendix C of this report. Again, while most of the systematic research relates to children, the increasing usage of mobile and portable dentistry in other populations suggests that studies of their effect on oral health outcomes in these additional populations should be encouraged.

Regulation

Project staff conducted a state-by-state review of laws and regulations governing mobile and portable dentistry programs in the US. It appears that as the number of these programs has increased across the nation, there has been a commensurate increase in the attention of regulatory bodies to providing parameters for their conduct. Thus, legislative and regulatory activity relative to mobile and portable dentistry has increased in recent years. The review of state law found that the majority of states still do not address mobile and portable dentistry to any noticeable extent in existing codes. However, at least 20 states have effected some rules or laws impacting the operations of these programs.

Fundamental differences in equipment and scope of services between mobile dental vans and portable programs might lead regulators to attend mainly to mobile dental vans, where equipment and services tend to be more extensive. However, most states that regulate do so conjointly, including both mobile and portable programs in basic common requirements while addressing the unique aspects of each modality in specific sections of law or regulation. Laws and rules governing these modalities are generally placed as coda to existing dental or dental hygiene practice acts or associated professional regulations; some program requirements are found in laws governing health facilities or schools. Medicaid law also addresses care provided in mobile and portable formats, making them reimbursable services.

Alabama and Illinois, for example, address mobile and portable dentistry in tandem. California and Tennessee exclusively address mobile dental “units” or vans in regulatory provisions. States often include provisions specific to van operation, such as who may drive a van, how the van must be equipped (including requisite accessibility options), and so on. States may also require that a dentist either own or be the main “operator” of the van. These rules may also codify the requirements for facility amenities in places where portable programs provide services (eg, availability of a clean water supply or toilets).

Indiana regulates mobile dental facilities and portable dental operations but exempts dental hygienists working in portable programs from rules governing these facilities, provided that their conduct in community settings complies with the state Dental Hygiene Practice Act. Michigan defines a mobile dental facility as inclusive of self-contained facilities that can be transported from place to place as well as other sites used on a temporary basis for the provision of dental services using portable equipment.

Regulation of the professionals, allowable services, required supervision, and conditions for patient consent in community settings often appear in health professions laws and rules. State dental boards regulate the conditions for practice not only in private settings but also in community and public health settings. Thus, a dental hygienist may be required to have a collaborating dentist or to work for a department of health when providing services in a school or nursing home. The services that are allowable in those settings may require preauthorization or be limited to education and screening. Scope-of-practice restrictions may inhibit full use of these professionals in public settings by limiting the provision of tasks within the basic competencies of dental hygienists (eg, prophylaxis). Many states now explicitly regulate practice in public settings through provisions in laws and regulations that provide dental hygienists with greater professional autonomy in community settings than in private dental practices, assuming the dental hygienist meets experience and training requirements to work in public health settings.

A review of state laws and regulations governing mobile and portable dentistry programs is available in Appendix D of this report.

Findings From the Case Studies

The case studies revealed both notable commonality and significant diversity in program structures and service delivery models among mobile and portable oral health programs. Each sponsoring organization had initiated the portable service delivery model to address an access issue in specific underserved populations or in rural geographies in the catchment area. However, each targeted population was challenged by distinct barriers in their abilities to access oral health services in more traditional clinical settings, which required individual program design and select partnerships to effect service delivery. While there was certainly uniformity in the reasons motivating use of these alternative modalities for delivering oral health services, each organization differed from the others in some aspect of their mobile/portable programs.

An important finding from the case studies was that mobile and portable oral health service delivery is appropriate as a means to:

- Increase oral health literacy in targeted populations

- Enable access to both preventive and treatment services
- Enable patients to establish a dental home in their local communities
- Address extensive unmet need for oral health services in a variety of underserved populations

While these programs are obviously suitable to reach children in schools, as demonstrated by emerging data on such programs, mobile and portable dentistry programs are also positioned to address the oral health service needs of confined elders; medically fragile or medically complex populations; marginalized populations, including the homeless and those with chronic infectious disease; rural residents; and others.

The following themes were developed from the information provided by case study participants. These themes describe pivotal commonalities among mobile and portable dentistry programs across the US. Each of the themes in the list is further elaborated in the paragraphs that follow. The distinctive characteristics of the various service providers also are discussed. The words “mobile” and “portable” and “oral health” and “dental” may be used interchangeably in the discussion of themes. Full descriptive briefs for all of the case study organizations are available in Appendix A of this report.

Common Themes

These mobile and portable dentistry programs were similar in many ways. The following were key common themes:

- Mobile dental vans and portable oral health programs are equipped to supply an array of dental services.
- The scope of services provided in mobile and portable dentistry programs ranges from preventive services to a full complement of dental treatment services.
- Mobile and portable dentistry programs have grown organically to meet the needs of particular populations or geographic areas for oral health services.
- Mobile and portable dentistry programs represent a response by local providers and organizations to unmet need for oral health services in communities of interest.
- The geographic locations and patient populations served by mobile and portable dentistry programs may change in response to shifting need.

- Mobile and portable dentistry programs are an integral part of the dental home.
- Mobile and portable dentistry programs reconcile service availability with the uneven distribution of dental providers in certain geographic areas or for particular populations.
- Mobile and portable dentistry programs are supported by various funding sources.
- Mobile and portable dentistry programs are an effective means of integrating oral health services into primary care environments.
- Mobile and portable service delivery results in the building of strong oral health care teams.

Mobile dental vans and portable oral health programs are equipped to supply an array of dental services.

The procedure-oriented nature of dental practice suggests that oral health services are not as portable as other health services. A traditional dental operatory is equipped with special lighting, clean water sources, an array of tools and supplies used throughout the treatment day, and imaging technology and sterilization equipment for infection control. This differs from many medical examination suites, which are generally sparsely equipped with only a sphygmomanometer to monitor blood pressure, a thermometer, and other basic items. Medical services are more often consultative and examination focused and thus generally more easily provided in nontraditional settings than are dental services. These case studies revealed that innovative technology, combined with human inspiration, have resulted in the ability of mobile oral health programs to replicate dental operatories in myriad locations using portable and fixed equipment to accommodate a range of patient needs.

Some portable/mobile programs used dental chairs mounted on moveable bases with positioning capabilities similar to those in dental offices. One program had even designed a portable denture lab that permitted both preliminary and final dental impressions on the same day of service. Electronic dental records were maintained on laptops and iPads with wireless hotspots; many providers used cloud-based storage so that patient records were available from any location where staff were providing services.

“Mobile” programs used trucks or vans equipped with fixed dental operatories or alternatively to transport mobile equipment that had been modified for use in a community setting. For example, one mobile program had traditional dental chairs mounted on movable bases that required transport by truck because they were not foldable; this differed from “portable” programs using collapsible chairs that could be transported in personal vehicles. As previously stated, these terms are conflated in this report because

the way in which the dental operatory was constructed did not materially impact care. However, programs using “portable” equipment usually provided a more limited range of services than “mobile” programs.

These portable and mobile oral health programs were highly organized and systematic in their logistical operations. Each had refined the service delivery process to appear seamless to the patient and to enable the professional with the necessary tools and physical resources to provide services. For example, a dental hygienist working in a school-linked program sterilized instruments at home in numbers equal to scheduled patients each day. The dental hygienist carried portable clean water supplies and/or used sinks, if available, at each facility. Supply cabinets or storage tubs were efficiently equipped with necessary dental instruments, gloves, masks, and even “goody bags” for children. Lighting was portable and easily transferred from location to location. The necessary technology for providing services was also suitably sized for portability, including laptops, vacuum and suction equipment, x-ray technology, and intraoral cameras.

Mobile programs generally had facility/logistical teams at the sponsoring organization who assumed responsibility for stocking supplies, van and equipment maintenance, and setup and take-down of the vans. Many also had on-call personnel to address emergent concerns related to equipment or scheduling.

The scope of services provided in mobile and portable dentistry programs ranges from preventive services to a full complement of dental treatment services.

The mobile and portable oral health service programs that participated in these case studies universally offered screening, diagnostic, and preventive services; many also offered a range of treatment services including restorations, stainless steel crowns, tooth extractions, and even denture impressions. Offering treatment services obviously depended on whether dentists were actively involved with the dental team staffing the program. Some programs were staffed only by dental hygienists and thus were focused on oral health education and prevention. Others employed a full dental team, including dentists, dental hygienists, dental assistants, and even dental residents, which increased the array of services available to patients.

Most of these programs, however, provided a minimum of analgesia or anesthesia services. Some provided local anesthesia as needed for patients; others provided only services that did not necessitate pain control. Dentists in these programs were able to schedule patients in need of more extensive restorative or therapeutic services at a fixed dental clinic directly affiliated with the mobile program, with a specialty provider in the local community, or at a hospital at which the dentist in the mobile program also provided ambulatory outpatient dental services.

Many of the programs had established protocols for referrals to community providers, both general and specialty dentists, who had expressed a willingness to treat patients in need of services that were unavailable in the mobile program. Several of the programs had even arranged discounts or funding for these services through formal arrangements or contracts with community dental providers. The 2 dental hygiene school-linked programs had reserved revenue from operations to meet the needs of students who could not otherwise pay for dental treatment services. St. David's Foundation had also effected agreements to pay for discounted specialty services in the community.

Mobile and portable dentistry programs have grown organically to meet the needs of particular populations or geographic areas for oral health services.

Each of the mobile and portable dentistry programs visited for the case studies had initiated services in the community of interest on a limited basis to address an identified need. Each had gradually expanded as recognition of greater public need occurred and as resources to support and sustain expansion were identified. This type of incremental, organic growth was necessary to be responsible to the community of stakeholders. Several programs acknowledged the need for expansion to other areas or populations but recognized that current resources would not support further growth. In fact, further expansion might jeopardize services for those already benefiting from the program.

School-linked oral health programs are an ideal example of the process of organic growth. Many began as state-funded programs to increase access to fluoride varnish or dental sealants for children, which are important Healthy People 2020 goals. As these programs proved safe and effective and as the potential for services in schools became apparent, the scope of services offered by dental hygienists expanded in many schools to include full preventive services provided on a periodic basis. School-based health centers have also increasingly recognized the need for oral health services in student populations, and some now incorporate a fixed dental chair or space for a portable chair for use by an itinerant dentist or dental hygienist providing mobile services.

Case study participants noted that services provided in a mobile or portable format must be responsive to community need. One of the mobile dental van programs was initially conceived with a preventive focus, but upon implementation consequently provided predominately restorative services based on manifest need in the targeted population. Program management commented that over time, with consistent and recurring services, the prevailing need in the patient population shifted back to preventive care.

Other providers intended from inception to provide comprehensive services, based on the magnitude of systemic barriers to oral health services for targeted populations. Access Dental Care is a comprehensive service provider with a specialized niche in the community; it is special-needs focused, making it unique among the case study participants. The founding dentist recognized that marginalized populations—

including people with developmental disabilities, those with acquired infectious disease, the mentally ill, the homeless, and the elderly in skilled nursing care—encountered complex barriers to obtaining dental services in traditional settings. The program is a full-service dental provider in settings convenient to patients, such as group homes and day habilitation centers. The magnitude of special needs in various communities was notable to project staff, suggesting that Access Dental Care’s program model, which replicates that of Apple Tree Dental in Minnesota, would be useful in many areas of the country.

Mobile and portable dentistry programs represent a response by local providers and organizations to unmet need for oral health services in communities of interest.

The often-repeated dictum that locally designed solutions to oral health access issues are important was evidenced in the diversity among mobile and portable dentistry programs and their orientations to particular communities of interest. As stated in the preceding paragraphs, one case study participant focused on populations with special health care needs; another focused primarily on the delivery of oral health services to residents of skilled nursing facilities; and several focused exclusively on children in low-income families, many of whom were racially and ethnically diverse or living in families in which English was a secondary language. These school-linked and school-based oral health programs were predominately providing services in Title I schools in which significant percentages of enrolled students qualified for the federal free and reduced lunch program. Yet another program treated both adults and children living in poverty in the community.

Many sponsoring organizations had completed needs assessments to determine which groups among those living in the catchment area were most in need of oral health services. As an example, a survey by a coordinating care agency of their patients living with HIV found that stable housing was the most prominent need in that population, with dental services ranking second in the hierarchy. This motivated the agency to network with a mobile dental provider to enable oral health services for their patients.

All of the target populations served by these programs exhibited some vulnerable qualities due to dependence on others for transportation to dental services or cultural, language, or socioeconomic barriers that decreased access to routine oral health services. Some populations were vulnerable because of homelessness or medical diagnoses that complicated their ability to seek care in traditional health care environments. All encountered some combination of barriers to obtaining services.

The geographic locations and patient populations served by mobile and portable dentistry programs may change in response to shifting need.

Case study informants discussed the importance of frequent re-evaluation of need in targeted population groups or in geographic areas. They emphasized the necessity of continuous and ongoing

review to evaluate whether populations currently served were still those in greatest need and to identify emerging or shifting demand for these services in other population groups.

One case study informant commented that shifting need for oral health services in communities served by mobile and portable dentistry programs may be a marker of the success of these programs in terms of helping patients find consistent dental providers to act as dental homes in their communities. The flexibility of mobile and portable dentistry programs allows providers to respond to these shifts in service areas with minimal alteration of infrastructure and staff.

Some mobile and portable dentistry programs are intended to provide an immediate but theoretically temporary solution to lack of access to oral health services in particular communities or for particular populations. For instance, student populations in a school may shift based on improving economic conditions in the community, so that the oral health services originally in high demand may no longer be needed. Portable and mobile dentistry programs are sufficiently nimble to be moved from school to school.

Other mobile programs expected from onset to act as an enduring solution for intractable problems with access to oral health services for specific populations. For several reasons, residents of skilled nursing facilities encounter difficulty with travel to dental practices in the community—for example, the dental practices are not wheelchair accessible, or it is difficult for a person who is medically fragile to leave the nursing facility. Northeast Mobile Dental Services provides preventive, treatment, and therapeutic services for residents of skilled nursing facilities under contract with nursing home administrations. The program is able to provide oral health services sufficient to maintain most patients within the facility, reducing the need for access to community dental providers.

Mobile and portable dentistry programs are an integral part of the dental home.

Mobile programs in the case studies did not operate in isolation from the formal oral health and health service delivery systems in their catchment areas. Many worked with local dental and health care providers, social service agencies, and community-based organizations with a common interest in and engagement with special populations to coordinate treatment options and to ensure a full continuum of service availability.

The programs that participated in the case studies either themselves constituted a comprehensive dental home for their patients or worked in concert with community stakeholders and local dental providers to identify and establish a dental home for their patients. Mobile dental programs in skilled nursing facilities employing both dentists and dental hygienists were an example of a constituted dental home for patients, as most necessary services were available onsite.

Access Dental Care, the mobile program designed for special-needs populations, offered a range of dental treatment services in convenient community locations such as group homes, day habilitation programs, and Programs of All-inclusive Care for the Elderly (PACE) and more extensive treatment services in local hospitals in patients' communities. The program effectively acted as a dental home; few patients required referral to external dental providers because of the comprehensive nature of the services offered by the program.

Often mobile and portable programs are an integral part of a continuum of services that constitutes a dental home, albeit in multiple settings. Jordan Valley Community Health Center is an example of a sponsoring organization that offers dental services in mobile dental vans, in fixed clinics at its main health center, and in affiliated satellite health centers. The FQHC also houses a dental surgery suite and a dental urgent care center, making it a comprehensive, full-service dental provider. The mobile dental program links patients to an entire system of care that also includes health and behavioral health services. Portable service delivery enables some patients to remain in the community for routine services and to access the fixed dental clinics only for more complex treatment needs. It is also a means to navigate patients to other integrated health services.

The mobile van program sponsored by the Eastman Institute for Oral Health also was an arm of a comprehensive dental home that included fixed dental clinics. Dentistry services were provided for school-children in the Eastman van program. Some specialty dental services were offered in the school-based dental clinic also managed by Eastman. An extensive array of complex specialty services was available in the Institute's main specialty dental clinic in Rochester. This system of care constituted a comprehensive dental home for the young people served by the program.

St. David's Foundation does not expect to provide a dental home through their mobile dentistry program but rather intends to help children and their families establish dental homes in their communities. The foundation adopted a 2-pronged approach to achieve this objective. The first component is to address immediate need for oral health services through direct programming using 9 mobile dental vans to provide dental services. The second component is to fund community organizations and health clinics to build dental infrastructure that will permanently serve the population in the areas in which the mobile vans operate. The success of their oral health initiatives is marked by a diminished need for services from their mobile dental van providers as patients are linked to dental homes.

For some children, a school oral health program becomes a dental home by default, especially if the child is well maintained with preventive services. A parent's reluctance to engage with a dental provider in the community or parental difficulty with finding a provider willing to accept the child as a patient can necessitate that the school-based program manage care. While this is regrettable from a continuity-of-care perspective, it is also satisfying that preventive interventions can help a child establish and maintain

oral health without further need for treatment services. According to one provider in the case studies, it is gratifying to “watch a child grow up with a healthy smile.”

Mobile and portable dentistry programs reconcile service availability with the uneven distribution of dental providers in certain geographic areas or for particular populations.

It is somewhat redundant to say that mobile programs are a strategy to address an insufficient supply of dentists or a limited supply of providers willing to accept payment for services from a state Medicaid program. Obviously, portable programming would not be needed if the fixed delivery system was adequate to meet demand for oral health services.

The driving force for most mobile and portable dental services is either to complement a system of care that effectively excludes a population (eg, the Medicaid insured) or to supplement deficient community resources. Most portable programs are necessary because of a lack of available service providers in a geographic area, a lack of financial resources in a population to purchase any services that are available, or cultural and literacy barriers to oral health services that prevent a particular population from seeking services.

Many of the mobile and portable programs were serving children and families living in poverty or at economic margins. Many were also serving culturally and linguistically diverse patients. One case study informant addressed the issue of cultural barriers to utilization of health and oral health services and their impact on service delivery. The informant discussed encountering distrust of free dental services within a culturally diverse community that had been misled in the past by offers of free care. The provider persisted in efforts to engage this community with the oral health services offered in the mobile program. Over time, as children from the community were provided with high-quality dental services, the local population became more accepting and recognized the good intent of the organization. As a result, oral health services in the mobile dental vans are now in high demand in that area.

“We provide another open door for patients, many of whom cannot get oral health services because they are rejected by providers for various reasons, such as insurance status.

Providers make excuses about why they cannot treat these patients. Our services are no different from what the patient would receive in private practice. We set the bar on standard of care, and we provide a model for how it should be done.”

—A case study participant

Mobile and portable dentistry programs are supported by various funding sources.

One interesting finding from these case studies was the variety of funding sources that supported mobile and portable oral health programs and the creativity of program sponsors in melding funds to provide services. All case study participants were not-for-profit organizational providers, and many engaged with various community funders as sponsors. Each had cobbled together funding sufficient to support service provision.

Among the case studies, organizations with sustainable funding sources generally remarked on feeling relatively secure in their ability to continue providing services. Organizations that were predominately dependent on Medicaid funding expressed significant concerns about long-term sustainability because of the vagaries related to state budget processes and Medicaid dental benefits.

Another important finding was that separate parts of a mobile or portable dentistry program might be funded differently using a mix of retainer fees, reimbursement for services, capitation payments, philanthropy and grant funding. Access Dental Care had an agreement with one funder that assured wraparound payments from grant funds when insurance revenue from daily services to patients fell below a threshold amount. Other community partners provided Access Dental Care with a capitated rate for services to mutual patients (eg, PACE programs). Skilled nursing facilities contracted by retainer with Access Dental Care to act as dental directors and manage care for residents; these funds were supplemented by recovered revenue for services to patients. As a result, some parts of the mobile dental program were more financially secure than others that depended solely on revenue from services. This diversification enabled Access Dental Care to better manage costs than other programs in the case studies with a single revenue source.

While grant funding and philanthropy was a part of the financial portfolio of several organizations, this is problematic in a different way from sole dependence on revenue from services. Grants often require

annual application and may require that the program become financially self-sustaining after a certain period of time. Some case study participants viewed annual grant applications as perfunctory, noting that continued funding for the program was almost assured due to the common mission of the grantee and the grantor. The St. David's Foundation mobile program was self-funded; foundation leadership and the board of directors were committed to being a direct oral health service provider as well

“Providing oral health services to people who are medically frail or medically compromised is the easiest part of what we do. Finding ways to be financially sustainable is the most problematic part of delivering services in a mobile format.”

—A case study participant

as providing grant funding to other community providers in order to build oral health infrastructure and service capacity in the Austin area.

Mobile and portable dentistry programs are an effective means of integrating oral health services into primary care environments.

Another very important finding was the usefulness of mobile and portable dentistry programs as a means of effecting health services integration in medical settings. The case studies revealed that oral health programming is often an ideal bridge to primary medicine and behavioral health services. Several case study participants were working with medical providers and/or social workers in the locations where they were providing oral health services.

Dental hygienists working in school-based or school-linked oral health programs were interfacing with nurses and social workers to identify and manage students in need of oral health services. In some cases, oral health service records were integrated into the student health record. Dentists and dental hygienists in skilled nursing facilities were working in tandem with nursing staff, nurse aides, and medical directors to address oral health care needs in the context of the overall health of nursing home residents. Case study informants discussed ongoing communication about the health status of residents, their medications, and their physical presentations with health care providers in these facilities. Skilled nursing staff and medical directors were aware of the importance of maintaining healthy dentition for their medically complex patients. Medical providers requested dental consults, and dental records were incorporated into each resident's health record.

Jordan Valley Community Health is an example of an FQHC that provides not only an integrated menu of services for patients but also an integrated approach to care. The FQHC sponsors both fixed clinics and mobile and portable programs to provide primary care, oral health, school health, optometry, and behavioral health services. (At the time of the case study, the FQHC was considering adding behavioral health services to its collection of mobile programs.) The clinicians on the vans are able to refer to other vans for other services, to the main health center's clinics, or to the numerous satellite health centers throughout southern Missouri when services are beyond the scope of those available on any one van. The various health disciplines working with and for the health center take a holistic approach to patient care and refer across clinics to ensure that patients have the opportunity to establish a comprehensive health home.

"Providers from the various health disciplines in health center programs work well together. We take a "hands-on" approach to provide continuity of patient care."

—A case study participant

“The vans are the flagships of the health center. The medical and dental services provided in the vans open the door to other services because our providers offer education about our health system when they are in the community.

The condition of a patient’s oral health is often more obvious than are other medical issues. Staff may observe that a person attending a community event or health fair does not smile or that he or she covers the mouth when talking. Decay and halitosis can also be obvious. Health professionals use conversations about the availability of dental services in the fixed clinics and mobile programs to also inform people about the medical and behavioral health services available from the health center.”

—A case study participant

Jordan Valley’s concerted efforts at integration both within its main health center and in its satellite clinics was evidenced by the design of the mobile health and oral health programs. One of their vans was equipped for both health and oral health services in the community. The van could be located in a neighborhood and staffed by primary medical providers one day followed by dental providers on the next. The health center used its dental outreach activities to engage new patients not only with oral health services in the van program or in the fixed dental clinics but also with health and behavioral health services offered in the comprehensive health home at Jordan Valley.

The location at which the case study with Access Dental Care was conducted was emblematic of the opportunity presented by the mobile format for integration of medical and dental services. The case study occurred in a very large primary care infectious disease clinic where most patients were HIV positive and where Access Dental Care was also providing oral health services.

The patients in that clinic benefited from an expansive care coordination program managed by a health network responsible for administration of services to Ryan White-eligible patients in a 7-county region of North Carolina. Care coordination staff at the network, who also worked with numerous other community-based organizations, managed all scheduling of patients with Access Dental Care during days when the mobile program was scheduled at the infectious disease clinic. Medical doctors and patients worked through the health network to effect patient referrals. Care coordination staff from the network were present during dental clinic hours to address patient needs.

For example, on the day of the case study, one dental patient had been unable to obtain his premedication for a dental procedure because of lack of funds to cover the required copay at the pharmacy. The care coordinator agreed to reschedule the patient for the following week, to obtain the medication for the patient prior to that new dental appointment, and to have it available at the infectious

disease clinic. The patient agreed to pick it up at the clinic, which was on the bus route on his way home from work.

On the same day, a dental hygienist had a question about the medical history of a new patient, and she was able to speak to the nurse in the medical clinic to resolve the issue. Informants to the case study commented that coordinated care was an exceptional model for service delivery that demonstrated how multiple entities in different systems of care worked together using a liaison as the gateway to integration.

“Being in a medical environment allows providers to develop a system of wraparound care inclusive of a variety of services, including dental. In this program, there is a lot of integration and interaction between multiple entities, all of whom strive to make care as seamless as possible for the patients.”

—A case study participant

Mobile and portable service delivery results in the building of strong oral health care teams.

Another observation garnered from these case studies was the strength of the clinical teams working in these programs, each member of which shared with the others a common and pervasive mission of improving the oral health of patients from underserved populations. The synergy of the core professional teams (consisting of dentists, dental hygienists, and dental assistants, along with office and administrative staff) and their success in utilizing the capabilities and competencies of each member were evident in all case study locations. These clinical teams functioned in concert to provide quality services in a seamless manner that benefited patients.

Some of the portable programs were staffed mainly by dental hygienists working with associated case management and administrative staff; these practices were possible because of expanded scopes of practice available to dental hygienists in the various states. These dental hygiene–sponsored school-linked and/or school-based oral health programs were effectively providing preventive oral health services throughout multiple school districts because dental hygienists were permitted to provide an extensive range of preventive and educational services for children without prior dental authorization.

While these programs worked closely with dentists in the community, the children were not required to be pre-existing patients of record of a dentist. This provided beneficial positioning for dental hygienists in a continuous and linear system of care for their patients. In the dental hygiene programs in the case studies, these professionals also often acted as case managers for children whose needs were beyond the competencies of the profession. Each program had formal mechanisms for patient case management and fail-safe measures to ensure that children received needed dental treatment to restore oral health.

Dental hygienists employed by these programs constituted a team working together within a specific school or singly in various schools across districts. The dental hygienists also teamed with administrative and nursing staff within schools to effect care and navigate students to treatment.

The mobile and portable programs that offered both preventive and dental treatment services were staffed by clinical teams inclusive of the range of dental professionals, along with supportive personnel such as social workers, community health workers, and administrative staff and management. Case study participants were respectful of the need for a broad and inclusive service delivery team to help patients surmount barriers to accessing oral health services.

Mobile and portable service providers also associated with various external professionals in the community, forming specific service delivery teams for patients. One case study informant commented on the necessity of mobile programs working with program liaisons in and from each of the facilities or organizations where the program provided services. Efficient service delivery required involvement of support staff, direct care workers, social workers, and medical staff in the various facilities to gain permissions, effect schedules, and communicate with families and caregivers.

“There are lots of moving parts that enable operation of the program. Having dental teams that include people from the facilities where services are provided is very important to the success of the program. Communication is key.

It is essential to have a reliable contact in every facility and to ensure that communication with families, with facility personnel, and with clinical staff, including registered nurses and patient care workers, is open and ongoing.”

—A case study participant

DISCUSSION

This study of mobile and portable dentistry programs across the US examined the literature describing the design, implementation, and impacts of such programs and the populations that ultimately benefited from increased access to oral health services. The work also included a review of state laws and regulations governing mobile and portable dentistry programs. The core project activity was the conduct of 7 case studies of nonprofit organizations across the US providing mobile or portable oral health services to populations in their catchment areas.

The use of mobile and portable dentistry services has garnered increasing attention in recent years as a useful and effective means of providing dental services in settings outside of the traditional private practice. While the historical model of delivering dental services in small private practices continues to work well for some populations, service availability or utility of the model for other populations is either variable or inadequate. Mobile and portable dentistry services appear to mediate the structural and financial barriers to access to oral health services experienced by some population groups. It was apparent from the case studies that these programs are now an indispensable part of the continuum of community providers in the formal oral health services delivery system.

The mobile programs participating in the case studies were remarkably successful in their ability to reach “vulnerable” populations, especially those dependent on others to effect appointments and provide transportation. Children, elders living in skilled nursing facilities, and the developmentally disabled participating in day habilitation programs were particular communities found to benefit from the availability of portable dental services. Many other groups were positively impacted by these programs’ outreach efforts, including culturally and linguistically diverse populations, people living in poverty, the homeless, and those with medical complexities and comorbidities that complicated treatment services.

While stakeholders sometimes express concern that mobile programs have the potential to act in isolation from the established delivery system, it was apparent from these case studies that these programs were integrated into local systems of care. These providers and their organizational sponsors recognized the imperative for partnership with the local oral health services delivery system to enable supplemental care for patients that was not possible or not available in a mobile or portable format. In addition, many of the sponsors were offering mobile or portable services as part of a larger dental home. Several of the programs either wholly constituted a dental home or were connected to a provider organization that was able to offer comprehensive dental services. However, it was necessary for programs that offered only preventive services to establish and maintain a dental referral system for

patients. These programs used case management to ensure that patients were navigated to appropriate dental providers.

These programs had a symbiotic impact for many local dental providers. Obviously, patients benefited from their presence in the community, but so did the local oral health provider community. The mobile programs benefited from association with dental providers either in the same organization or within mutual target communities, and fixed dental clinics and local dental practices benefited from associations with mobile programs because of new patient referrals.

Mobile and portable programs also were adept at appropriately managing risk in their patient populations. These services enabled some low-risk patients to remain in their communities for educational and preventive services, while those in need of intensive dental services were navigated to appropriate dental providers in local communities.

One especially important finding from this study was the opportunity for mobile and portable dentistry programs to foster the integration of health and oral health care services to realize comprehensive health homes for patients. The case studies offered several examples of portable oral health programs that were integrated into a medical system of care involving constant interchange between professionals from various health disciplines to effect services and improve health outcomes for their mutual patients. Dentists and dental hygienists in skilled nursing facilities worked with direct care nursing staff and medical directors to improve or maintain the overall health of facility residents. School nurses and dental hygienists worked together to ensure that children received the oral health care needed to have healthy mouths. The mobile dentistry program that located in a primary care clinic for infectious disease patients was part of a holistic system of care that involved coordination and case management to the benefit of the high-risk population seen in that clinic.

Another illuminating finding from this investigation is that funding streams for these programs vary. Mobile dental vans are costly both to outfit and to maintain, and revenue from services to uninsured or publicly insured patients served by the vans does not fully cover the expense. Many of the programs depended on philanthropy for sustainability or were harvesting funds from various sources to maintain financial viability. Portable programs, while requiring less capital-intense investment than mobile vans, are often heavily dependent on revenue from services provided to Medicaid-enrolled patients. Public funding for dental services is decreasing in many states, which is potentially threatening to the long-term sustainability of these important programs.

The increasing numbers of providers of mobile and portable dentistry services across the nation suggest increasing recognition of their importance as effective strategies to improve oral health outcomes in the

US population. The benefits of these programs, which include facilitating access to services and improving oral health management for patients, clearly support ongoing integration of mobile and portable modalities into the comprehensive oral health services delivery system.

Appendix A

CASE STUDIES

The following pages contain descriptive briefs of each of the case studies conducted for this project. The organizations that participated in the study were:

- ***Access Dental Care*** headquartered in Asheboro, North Carolina
- ***Eastman Institute for Oral Health*** headquartered in Rochester, New York
- ***Future Smiles*** headquartered in Las Vegas, Nevada
- ***Health Promotion Specialists*** headquartered in Columbia, South Carolina
- ***Jordan Valley Community Health Center*** headquartered in Springfield, Missouri
- ***Northeast Mobile Dental Service*** headquartered in Derry, New Hampshire
- ***St. Davids's Foundation*** headquartered in Austin, Texas



Access Dental Care

Asheboro, North Carolina

Background

Access Dental Care is a not-for-profit, 501(c)(3) entity headquartered in Asheboro, North Carolina. The organization was founded by Dr Bill Milner in the year 2000 to provide access to oral health services using a mobile format to bring dental services to populations with special health care needs. The organization has no fixed dental clinics. Its target populations include the intellectually or developmentally disabled; patients who are medically compromised or medically complicated, including those who are HIV positive; community-dwelling individuals with disabilities; and residents of long-term care facilities, including skilled nursing facilities and group homes.

The organization originally received sponsorship from the the Cone Health Foundation (\$365,000) and the North Carolina Dental Society (\$25,000). These awards enabled Access Dental Care to buy and equip its first mobile dental truck and to defray the cost of operations during the first year of the program. Subsequently, other North Carolina foundations have generously contributed more than \$1.6 million for program expansion. The Cone Health Foundation continues to support Access Dental Care in its work with

HIV patients through grant support of approximately \$100,000 annually, which contributes to organizational sustainability.

The organization has grown substantially since its inception in 2000. Access Dental Care now serves patients in 23 counties in central and southern North Carolina, primarily in the environs of Charlotte, Greensboro, and Asheboro, in both rural and heavily populated communities. The catchment area extends from west of Charlotte to Raleigh. Access Dental Care service teams travel within about an hour-and-a-half radius of a base location, which allows the service team to commute from their homes to the location where services are provided on a daily basis.

Access Dental Care has contracts to provide oral health services in 86 facilities and a waiting list that includes 15 additional facilities. The organization provides services in a mobile format in medical clinics, group homes, skilled nursing facilities, Programs of All-inclusive Care for the Elderly (PACE), and day programs. Since its inception, Access Dental Care has provided more than 100,000 patient appointments for oral health services.

The organization deploys 3 trucks daily, 5 days a week, each with a dental team consisting of a dentist, a dental hygienist, and 2 dental assistants. All members of the dental team are trained to drive the trucks and to load and offload equipment. Two of the teams are based at the organization's headquarters in Asheboro, and one works from a base in Charlotte. Each team treats 15 to 18 patients per day in their host location. They may be in that location for only one day, or they may remain in one location for several days to address the needs of patients.

The Mobile Format

Access Dental Care's service delivery model is fashioned after that developed by Dr Michael Helgeson for Apple Tree Dental in Minnesota. All dental operatory and related equipment is transported to service delivery sites in 16-foot panel trucks modified to efficiently hold in place all equipment and materials, including supply carts, water and air compression apparatus, lighting, autoclaves for sterilization, and dental chairs. The trucks are outfitted with lock-downs to prevent movement and damage to equipment during transport. Each truck is equipped with an easily deployed "tommy" lift as a back door, and each is structured to support the weight of the equipment. The trucks are appropriately sized to enable them to be easily parked close to any building where services are scheduled. Equipment is offloaded from the truck by the dentist, dental hygienist, and dental assistants on the service team and placed in the temporary clinic space within a very short period of time.

Each truck transports 2 fully-equipped dental operatories, which allows the dental team to provide preventive and restorative services for patients contemporaneously. One chair is used by the team's

dentist to provide treatment services, while the other is used by the dental hygienist for screening, diagnostic, and preventive services. Comprehensive care is provided to all patients. For those with extreme behaviors, Dr Milner provides operating room care under general anesthesia at Moses H. Cone Memorial Hospital in Greensboro or at Randolph Hospital in Asheboro.

Standard equipment also includes a portable denture lab to take both preliminary and final impressions for dentures; those impressions are then sent to a laboratory for fabrication. Access Dental Care staff have streamlined the process so that a patient is required to have only one sitting for impressions rather than the more typical 2 appointments.



All portable dental equipment has been modified to sit on fixed moveable bases with wheels, making it mobile. These changes were made by local workmen in consultation with Access Dental Care staff. Together, Access Dental Care and the business that modifies the trucks and equipment to meet program needs have worked with other mobile dental teams in a variety of states to design trucks for their use in similar programs. Trucks have been delivered to programs in New Hampshire, South Carolina, and the Cabarrus Health Alliance in Concord, North Carolina.

Because North Carolina winters are relatively mild, garaging of the trucks is not particularly problematic during colder weather. The trucks are also appropriately insulated to prevent damage to equipment. They are parked at one or the other of the organization's base locations and driven by a member of the dental team to each scheduled location.

The Regional Center for Infectious Disease

This case study was conducted at the Regional Center for Infectious Disease (RCID) in Greensboro, North Carolina, which provides multiple services to HIV-positive patients and others with chronic infectious diseases in one convenient location. The health center is located in a building that serves as the Medical

Arts building for an adjacent hospital, the Moses H. Cone Memorial Hospital. The RCID has affiliations with this hospital and 4 or 5 others in the 7-county region in which patients live.

The RCID was conceived and built by a consortium comprising a large health system, Cone Health, and 3 community agencies in Greensboro. The center is mainly staffed by 5 primary medical care providers who are part of the Cone Health Medical Group. Medical providers work in partnership in the clinic with 16 clinical and support staff, including case managers and behavioral and mental health professionals. While the background of and operations within the center are too complex to describe in this brief, the result is a comprehensive health home for patients with complicated medical, social, and dental needs. The patients served in the RCID are as diverse as the community in which it is located. Patients include racial minorities, members of the local business community, people who have acquired HIV through blood transfusions or at birth, and those with substance abuse disorders.

The Central Carolina Health Network (CCHN) provides the funding for medical and laboratory services for Ryan White HIV/AIDS Program eligible patients at the RCID. CCHN is responsible for providing inclusive health services for HIV-positive patients in a 7-county area in central North Carolina within which there are approximately 3,300 people with HIV and AIDS. CCHN serves approximately half of this population. Network services are funded through multiple sources, including the federal Ryan White program, the Centers for Medicare and Medicaid Services, and philanthropy from an array of private foundations. CCHN collaborates with community-based service organizations for case management, family social services, housing, substance abuse counseling, and bridge/transitional services for its patients. Access Dental Care is one of these community partners and is considered an integral component of the system of wraparound care that CCHN has built.

Another important partner is the Triad Health Project,⁹ which began as a grassroots organization to help founders' friends with HIV/AIDS during the emerging health crisis in the 1980s. Triad has evolved to become one of the largest AIDS service organizations in the state. Triad employs paid staff but also engages a large cadre of volunteers in its numerous community initiatives. Triad is contracted to the CCHN to provide patients at the RCID with case management and crisis management services as well as bridge counselors for those who have fallen out of care, those who are newly diagnosed, and those who



are new to the region. Counselors may help with finding housing, pharmacy services, transportation, food, and financial support to meet insurance copays. Triad's case managers contact CCHN when patients need medical and dental services. CCHN coordinates the scheduling of that care through the RCID, including referrals to the dental program.

A leader of the network interviewed for this case study described the importance of seamless integration of health, mental health, dental, and social services for the HIV-positive population. Actualization of the goal of integration has resulted in interactions between multiple entities within the network and across the communities in which patients live. This has been beneficial to all partners, but especially to the patients. The synergies between the dental clinic and the RCID are an example.

Access Dental Care at the RCID

Since Access Dental Care began its association with the RCID in 2012, 500 patients have established a dental home with the program and 200 additional patients are on a waiting list for services. Access Dental Care currently serves the RCID 3 to 4 days a month, usually in 2-day concurrent sessions to ensure that all scheduled patients receive services. The dentist and dental hygienist each treat approximately 6 patients in a clinic day. The daily patient caseload is more limited (12 to 14 patients) at the RCID than in other locations because many are high risk and take longer to treat. The patients served in the dental clinic come from both near and distant homes within the 7-county region.

At the time of this case study, Access Dental Care was adding 1 day a month to its schedule in Greensboro to accommodate waiting-list patients. This would expand its presence in the RCID to a full week or 5 clinic days each month. CCHN was also in discussion with a local Department of Health dental clinic that had expressed some willingness to see patients on the waiting list beginning in the summer of 2017. Capacity from that provider was thought to be limited to 1 day a month. CCHN had agreed that patients would be seen in their specific dental home once the Department of Health began providing services so that their provider of dental care would remain consistent.

Funding for the services provided by Access Dental Care at the RCID is provided by revenue from Medicaid, Ryan White funds, and philanthropy. The agreement between Access Dental Care and CCHN guarantees the mobile dental provider a daily rate of \$3,200 per day. CCHN will provide wraparound funds to cover the cost of providing oral health services up to that amount when reimbursement for services from all sources on any clinic day falls below the threshold. It will also cover the cost for patients who do not appear for scheduled services. The Cone Health Foundation provides the annual grant that pays for uncompensated dental care services and for support for scheduling, care coordination, billing, and data entry. This funding is essential to sustain the program. When Access Dental Care first started 17

years ago, Medicaid was reimbursing more robustly at approximately \$0.68 on every dollar. The rate has gradually declined to about \$0.39 on the dollar.

CCHN has a designated network liaison working with the dental program to coordinate patient communication, transportation, financing, scheduling, and so on. The liaison is also responsible for billing the Ryan White program for dental services provided to patients. North Carolina is one of only a few states that offers a comprehensive fee-for-service dental benefit to adults who are Medicaid eligible. However, as North Carolina did not expand benefits under the Affordable Care Act, single adults who do not meet disability criteria do not qualify for benefits from the Medicaid program. In addition, only 6 of the patients of record at the dental clinic had commercial dental insurance. Patients at the RCID who are Medicaid ineligible and uninsured are covered for dental services under the expansive provisions of the Ryan White program.

On the day of this case study, the dental clinic was located in a conference room in the medical clinic that was emptied of furniture for placement of the 2 dental chairs and associated equipment. A portable curtain separated the 2 operatories to permit a measure of patient privacy. The comprehensive oral health services provided by Access Dental Care include diagnostic/preventive, restorative, prosthetics, endodontics, and oral surgery. North Carolina Medicaid will pay for a new set of dentures every 10 years and for a partial denture every 8 years.

Dental services are important to the HIV community. When CCHN conducted a needs assessment of their patient community, patients identified stable housing as their most significant need and access to dental services as their second most pressing need.

It was evident that oral health was an integrated service in the clinic environment. A case manager accompanied several of the patients to their dental appointments and in once case provided the patient with transportation. The infectious disease clinic coordinator was also present in the dental clinic to assist with a patient who had been unable to obtain anxiety medication due to his inability to pay the pharmacy. The coordinator efficiently addressed



the problem by agreeing to reschedule the patient for dental services the following week and to obtain the medication for the patient. The patient agreed to stop at the clinic the day before the scheduled appointment on his way home from work. A medical question arose about another dental patient. The dental hygienist left the operatory and asked the triage nurse in the clinic for the necessary medical information to determine how to proceed with the oral health services.

Occasionally, patients fail to appear for appointments. The case managers and clinic coordinators make a concerted effort to get patients to dental services, because not showing for scheduled services can be problematic. The clinic will contact a patient up to 6 times to schedule a service and will coordinate transportation if needed.

The RCID and CCHN use CAREWare software for patients' electronic medical records. This is a free information system for Ryan White HIV/AIDS Program grant recipients, developed by the US Health Resources and Services Administration. Medical providers also access Epic systems at the various hospitals with which the RCID is associated.

Access Dental Care uses SoftDent for its electronic dental record, and there is no bridge to the CAREWare system. As a result, duplicate data entry is required to maintain inclusive health records. To coordinate services in light of the lack of systems interface, care managers at CCHN and the RCID print medical histories and medication lists for each of the patients scheduled for care at the dental clinic. These are provided to clinicians at the beginning of each clinic day as reference documents. When questions arise about any medical issue (eg, the need for prophylactic antibiotics before a dental service), a triage nurse at RCID is available to provide immediate input or to seek feedback from a physician.

Access Dental Care's Mobile Services

Because Access Dental Care's mission is to provide special-needs dentistry, there is a strong motivation among all member of the dental team to never deny care to a patient because of behavior. Informants to the case study discussed the varying needs of particular patient populations served through the mobile program. Examples included HIV-positive patients needing medications to reduce dental anxiety or to reduce pain from complications of their infection that might prevent them from sitting in a dental chair for the duration of a procedure. The elderly population in nursing homes was described as often impaired by cognitive decline, so treatment must be tailored to address anxiety or combative reactions. Sometimes, the residents of group homes who are severely or moderately impaired have behavioral issues. However, those living in group residences were described as mostly very receptive to receiving services at home. When there is a known issue for a particular patient, dental treatment can be provided in the hospital under sedation, although this was considered a course of last resort. Dr Milner treats hospital cases several days a month.

Informants provided detail around the challenges of providing services to the elderly living in nursing homes. The organization has contracts with many skilled nursing facilities. The protocol in these settings may differ from those of more typical environments. Patients in nursing homes are not rigidly scheduled for services; flexibility is needed because patients' cognitive or health status may vary from day to day. Access Dental Care schedules with administrators to be in the facility on a particular day. A facility liaison generates a list that provides information about the patients within the facility who need to be seen and helps to determine who on the list is best treated on a particular day. The dental operator is situated in a designated area, and direct nursing staff help to maintain patient flow. Generally, there is a patient in the dental chair while another waits in the hall. It is easy to move patients quickly because they are in residence in the same location, and all are generally accessible.

Working in nursing homes is especially challenging, but over time and with experience it becomes somewhat routine for providers. Medications used in the elderly patient population are relatively standard and consistent across facilities. Each facility has a staff pharmacist to advise the dentist if a prescribed medication might have an interaction with another. Most nursing homes also have standing orders to provide patients with Ativan if they begin to exhibit anxiety. Nurses are readily available to address problems that may arise, and nursing home staff usually accompany the patient to services. Elderly patients tend to feel comfortable in their own environment, so they are generally very cooperative.

Health histories are part of the patient record in these facilities and are easily accessed. About 15% of nursing home patients may require sedation. Patients with dementia or a history of stroke may need to be medicated or restrained for their own safety, but those issues are addressed on a case-by-case basis. The dental staff have developed valuable behavior management skills and encourage adaptive behavior when they perceive that a patient is fearful. One dental hygienist spoke of using her arm position to protect a patient's head so that the patient was not so afraid.

One of the most difficult challenges in nursing homes is that patients do not routinely brush their teeth. Access Dental Care professionals attempt to educate the direct care staff at the nursing facilities, but due to a high rate of turnover, there is little consistency in care. It is an intractable problem given that oral health is easy to neglect when other issues divert the attention of patient care technicians. Dr Philip Sloane of the University of North Carolina co-created a program called *Mouth Care Without a Battle*, which teaches daily mouth care for persons with cognitive and physical impairments. He is working with 40 nursing homes and has placed an oral health care aide (a certified nursing assistant who has been trained in oral care for the elderly) in each facility. The certified nursing assistant is not able to see all patients, but earmarked patients have shown noticeable improvements in their oral health.

Funding for Services

Access Dental Care has diverse funding sources to support its work. About three-quarters of the patients served by the mobile teams are eligible for some public funding (eg, Medicaid or the Ryan White program). However, only about one-third of recovered revenue for services is from these sources. Medicaid reimbursement rates are relatively low in North Carolina, although patients are fortunate that the program provides a comprehensive adult dental benefit. About one-third of the funding for Access Dental Care is from private insurance plans, and another third is from capitation for patient services in various facilities.

Each of the facilities that contracts with Access Dental Care has a different funding stream. Many nursing home residents are insured by Medicaid. Access Dental Care is engaged as the dental director in the skilled nursing facilities with which it has contracted, and as a result, it receives a per-licensed-bed fee to provide a dental home for patients. This supplements the revenue from public and private insurance reimbursement for the services rendered, making it possible for the program to continue providing services.

Access Dental Care does serve some private nursing homes in which all residents are private pay, but most of the skilled nursing facilities are a mix of public and private. About 25% of nursing home residents treated by Access Dental Care are private pay, which contributes to a more balanced payment mix and to the financial soundness of the program. In addition, Access Dental receives grants from foundations and donations from private philanthropy.

The 3 PACE programs contract with Access Dental Care on a capitated fee-per-participant-per-month (approximately \$60) basis to address routine and emergent oral health issues, including dentures for PACE-enrolled elders. Although these capitation payments are lower than the actual cost of providing services, the financial arrangement is acceptable. The services for PACE-enrolled elders are provided at the day centers at which each program operates.

Access Dental Care collects outcomes data such as the number of daily patients, services provided, UCR (usual, customary, and reasonable) rates for completed services, and net revenue. Each year, Access Dental Care compares its production forecast with the actual number of completed services. The staff constantly monitors the financial stability of the program. At present, Medicaid reimbursement rates are very concerning. At the time of the case study, representatives of the program were hoping to meet with North Carolina Medicaid to discuss their inability to continue to provide services to these at-risk populations under current conditions. While there is considerable demand for Access Dental Care to expand, it is reluctant to do so unless sustainable funding is assured.

Workforce

Access Dental Care employs 4 dentists, 2 of whom work full time. One dentist, who sold a private practice to work with the underserved, is currently under contract to the program 3 days a week. Once funding to support more services is secure, that dentist will work full time. Another of the dentists works 4 days a week in private practice and 1 day a week in the mobile program. Four full-time dental hygienists and 5 full-time dental assistants rotate on the mobile teams. Retention of the workforce is excellent. The newest member of the organization has worked with the program for 3 years. Access Dental Care is able to offer relatively competitive salaries, but team members are expected to work a 5-day week rather than the 4-day week that is typical of private practice.

The organization also employs 4.5 full-time equivalent (FTE) employees in the office in Asheboro to manage scheduling at the contracted facilities, to handle billing and receivables, and to perform other functions. A board of directors advises the program.

Eastman Institute for Oral Health

SMILEmobile Program

Rochester, New York



Background

The Eastman Institute for Oral Health in Rochester, NY offers an inclusive configuration of community and public health dentistry services, specialty dental clinics, dental research, and several dental residency programs. The original Rochester Dental Dispensary that now constitutes the Institute was founded to improve the oral health of local children in 1905 with philanthropic donations from Henry Lomb, a founder of Bausch and Lomb.¹⁰ In 1915 and 1916, donations from George Eastman of Eastman Kodak along with donations from the Ritter family of Rochester allowed the dispensary to establish the Rochester School of Dental Hygiene at the clinic site. The early dental dispensary housed a tonsil and adenoid clinic for treatment of nose and throat ailments and also provided dental services including orthodontics. The dispensary is renowned for having aviaries and storybook murals in its patient waiting rooms during those early years to entertain its young patients.

During these years, George Eastman and John D. Rockefeller provided funds to establish the University of Rochester's School of Medicine and Dentistry, although the dental component of the school was never realized. The university instead created a dental fellows program and a long association between the dental dispensary and the university began. The Rockefeller family continued to provide funds to support dental research and training.

In 1951, the University of Rochester in cooperation with the dental dispensary created a master's degree program with a major in dental science and ultimately created the department of dentistry and dental research at the university. During these years, the school of dental hygiene, which had been located at the dental dispensary since its founding in 1917, was moved to Monroe Community College and the dispensary expanded its program of dental research. The dispensary offered clinical training programs for dentists that were then and continue to be highly regarded.

The name of the dispensary changed over time from the Rochester Dental Dispensary to the Eastman Dental Dispensary to the Eastman Dental Center and eventually to its current name, the Eastman Institute for Oral Health. The close relationship between the dispensary and the university became a merger in 1997 and 1998 resulting in a partnership between the two organizations to provide oral health services, graduate dental education, and oral biology research. The current headquarters of the Institute including its many specialty dental clinics is located adjacent to the University of Rochester Medical Center, Strong Memorial Hospital, which is university owned and operated. The Eastman Institute is a division within the university medical center.

The Institute's headquarters underwent structural renovation in 2011 that resulted in a substantial expansion of clinic space available for patient services. The current building is spacious and designed to allow for numerous general and specialty dental services mainly for patients from underserved populations in the city.

The Eastman Institute has more than 150 associated dentists, some of whom are community preceptors. Within the Institute, there are approximately 90 full and part-time licensed dentists and 133 dental residents completing training in either general or specialty dentistry and providing services to patients. New York State is 1 of only 2 states in the nation that currently require a newly graduated dentist to complete a residency program before practicing in the state. Thus, dental residency programs are in high demand. New York has 5 dental schools and a portion of their annual graduates plan in state practice. Each year between 250 and 300 new dentists apply to complete the general practice dentistry (GPR) program and approximately 400 apply to the advanced education in general dentistry (AEGD) program at the Eastman Institute. Only a small number proportionately are accepted to these programs.

The Institute also offers a 3-year fellowship program consisting of 2 years of clinical training in the AEGD residency and 1-year of post-doctoral research as well as programs for foreign-trained dentists wishing to practice in the US. The university partnership also allows for the completion of numerous graduate degrees including a MPH or a PhD.

The Eastman Institute for Oral Health is able to constitute a comprehensive dental home for those served by associated dental professionals. The Division of Community Dentistry within the



Institute sponsors the mobile program (SMILEmobile) as well as fixed dental clinics in several of the district schools and other offsite locations.

The Institute houses a wide array of specialty dental clinics including an urgent dental care, general dentistry services, pediatric dentistry, oral and maxillofacial surgery, orthodontics, periodontics, prosthodontics, and oral medicine and also provides specialty clinics for special needs populations including those with cleft palate and craniofacial abnormalities, the developmentally disabled population, the geriatric population, and those who are medically compromised.

The History of the SMILEmobile at the Eastman Institute for Oral Health

The SMILEmobile program at the Eastman Institute for Oral Health (EIOH) has a long history of providing oral health services in a mobile format throughout the Rochester, New York area. For more than 50 years, the program has served children in Head Start programs, in local schools, in summer school programs and in the community including at the Hillside Children's Center. The program began in 1967 as the inspiration of a dentist who had concerns about access to oral health services for both the urban and rural populations in and around Rochester. The program's early founding suggests that it is one of the oldest mobile dentistry programs in the US and certainly one of the most enduring.

The SMILEmobile program was initiated as a community collaboration led by the Monroe County Dental Society and Eastman. Very soon, Eastman assumed exclusive operation of the mobile unit. In the beginning, part-time dentists and volunteer dental assistants and dental hygienists provided oral health services to patients in many of the rural areas neighboring the city of Rochester including small towns such as Dansville, Newark, Batavia, and Corning. The area is largely agricultural and dental services were not abundant or not available in many of the locations initially visited by the program. The program has evolved to now include 4 mobile units staffed by full time dentists and auxiliary staff.

Dentists in the program also recognized the need for oral health services in the urban neighborhoods in Rochester where poverty is endemic. Rochester remains the poorest city in New York and one of the poorest cities in the nation, with more than a third of the population living in poverty. The median family income in the city of Rochester (\$30,540) is well below the national average (\$51,914).¹¹ Part of inner city Rochester is also designated as a dental health



professional shortage area while other more affluent suburbs in the metropolitan area have an abundance of dentists.

Only about 49% of ninth graders in the Rochester city schools eventually graduate from high school² and the community is concerned about improving social and health equity among those children to improve graduation rates. Four examiners from the Eastman Institute recently conducted oral health screenings at one of the local high schools. Over a 2-day period, they screened 183 students and found that 58% had visible untreated decay. A survey of students at another high school revealed that 70% had no dentist, demonstrating the need in certain communities for access to dental care. In 2016-2017 there were almost 30,000 students enrolled in one or another of the 50 schools in the Rochester city district; 57% were Black or African American and 67% of the more than 8,000 students with a home language other than English were from a family where Spanish was the primary language. More than 5,700 district students were identified as having a disability.¹²

The SMILE mobile program is managed by the Division of Community Dentistry at EIOH. The mobile program mainly serves children in schools in the Rochester City School District where a high percentage of students are eligible for free or reduced cost lunch based on family income. The now lengthy history of the SMILEmobile in the community suggests that the program is institutionalized as a dental provider in many city neighborhoods. It is now routine for one of the mobile units to arrive each spring, winter or fall at a school parking lot to provide dental services for enrolled students. More than 40,000 children have received dental services since inception of the program.

Oral Health Service Delivery in the SMILEmobiles

Until 2016, the SMILEmobile program included 4 mobile units, the last of which was added to the fleet in 2007 with a grant award from the Ronald McDonald House Charities of Rochester. Prior donors included Ronald McDonald Charities and several local foundations. The 4 original units are converted trailers that require transport by truck to each school location. These units have been remodeled over time due to the generosity of grantors and philanthropists. Several included donated dental chairs and other dental equipment. Currently only 3 of the 4 original units are in operation.

The most recent and fifth SMILEmobile was added to the program in 2016 with a donation from the *Lobazzo Family Advised Fund of the United Way of Greater Rochester*. The newest unit is a self-contained drivable van that is wheelchair accessible and specifically equipped to enable treatment of those with special health care needs including the developmentally disabled and residents of skilled nursing facilities. This newest unit is also equipped with a Panorex, a wheelchair lift, and an air glide chair. It will serve students in several schools but especially those attending Adlai E. Stevenson School #29, which has

a GEM program (Growth and Education for Students with Multiple Disabilities) for students from kindergarten to grade 8.

The SMILEmobile program is a year-round initiative to provide oral health services to Medicaid and Child Health Plus eligible children who do not have dental homes. During the academic year, the units locate near school playgrounds and in school parking lots to provide services to enrolled students. The units are also used in the summer to treat children and adults in Monroe County and in surrounding counties including Livingston, Steuben, Wyoming, Genesee, and Orleans.

Each year more than 2,000 children from 17 Rochester City School District elementary schools receive oral health services on one or another of the mobile units. More than 7,000 visits are completed annually in the mobile vans. The program is in high demand and has a waiting list of schools that have requested services. For example, in one school with 700 enrolled students, about 300 children regularly receive oral health services on one of the mobile units.

Funding for the program is mainly from revenue generated from services provided to children. SMILEmobile dentists participate with all of the Medicaid managed care plans in the state except for FidelisCare. Children with a Fidelis plan are generally referred to a local FQHC with dental capacity that accepts that insurance. About 97% of the children served by the mobile program are publicly insured.

The SMILEmobile program is highly organized. A towing company moves the three trailer units over weekends to the next designated locations. Eastman has worked with the same towing company for many years so workers are familiar with where to place the van on the school property; the vans are located in the same place each year. The mobile units remain in place for 4 or 5 weeks at each location to enable visits for all children in need of services. The units are only able to visit a school once a year due to high demand from the Rochester community. The towing company requires 2 weeks' notice for a move. Services on the van are planned to end on a Friday at one school and recommence on Monday at another. Each of the mobile units is equipped with a compressor and timers which control refrigeration and heating for the units, turning the systems on and off at a scheduled time each day. Each unit is also equipped with an alarm system after some experienced vandalism in the past. In addition, all of the schools are equipped with external cameras that capture any unusual activity around the mobile units in the school parking lots.

On the day of the case study, one of the SMILEmobiles was located at the largest school served by the program, the John James Audubon School #33. It is located at this school for about three months each spring to enable children in pre-kindergarten to grade 6 to receive oral health services. The van is usually scheduled for arrival beginning sometime in April and extending through the close of the school year in

late June. The oral health service delivery process is now well oiled at that school. In January, a SMILEmobile program coordinator drops permission forms at the school and returns in March to retrieve signed consents. Program coordinators are able to determine how long the van needs to be at the school based on the number of children with parental permission for services. Parental consent forms are effective for 1 year.

A typical day on the van begins about 8:00 AM and ends about 2:00 or 2:30 PM depending on school hours. Each mobile unit contains two dental operatories and is staffed by a pediatric dentist and a dental hygienist or dental resident and 1 or 2 dental assistants. General practice and pediatric residents also rotate on the vans and in the several community clinics managed by the Division of Community Dentistry, EIOH. Other staff may also be on the van to escort children back and forth to their classrooms and to handle paperwork related to the visit.

The first appointment is reserved for the dental examination and development of a treatment plan, which is then sent home to parents. Services on the mobile units include full dental examinations, treatment planning services, preventive oral health services, and a broad range of restorative and treatment services including extractions, pulpotomy, and placement of crowns. Students in need of further services are referred either to the Institute's fixed dental clinics in the community including several in Rochester and one within School #17 or to one of the specialty clinics at the headquarters location. More than 250 students from the van program are referred each year for orthodontic services and others for treatment services that require anesthesia. Local anesthesia and nitrous oxide analgesia are provided only in the fixed school based clinic (also at School #17), in the community dental clinics sponsored by Eastman, or in the clinics at the Institute headquarters. The program follows up with parents who do not comply with recommendations for dental treatment for their children.

To provide continuity of preventive care for the children, a dental hygienist visits schools 3 months after the SMILEmobiles have left. A dental hygienist visits Head Start and kindergarten programs every 3 months to apply fluoride varnish on the teeth of children 6 years old and younger. Van personnel also attend health fairs and other community events to conduct health screenings and educate the public about the services available through Eastman. In the past, several different software programs were used for the electronic dental record. Eastman clinics are commonly using Axiom software from a Canadian company. This software is regularly used by dental schools and academic dental centers across the country. Encounters for each of the students may be charted in real time or post encounter during downtime depending on what is most expedient and whether or not there is connectivity in the unit at the time. Tiger View software is used in one of the SMILEmobiles to store and view x-ray images acquired during the encounters.

The SMILEmobile program has, at times, struggled with financial viability due to its heavy dependence on revenue from Medicaid although administration has been able to sustain service delivery. There have been years when the program operated at a deficit resulting in program administrators working to make service delivery more efficient. The program has also benefited from philanthropic donations and grants for capital investments that have enabled program continuation.

The School Based Dental Clinic Sponsored by the Eastman Institute for Oral Health

Enrico Fermi School #17 is one of the largest elementary schools in the Rochester District. The campus is home to a FQHC, the Orchard Street Community Health Center, which is a consortium effort that houses both the Rochester Regional Health Family Medicine practice and the Daisy Marquis Eastman Dental Center managed by the Institute. The dental clinic is open Monday through Friday from 8:30 AM to 5:00 PM to any community member; the clinic provides both scheduled appointments and emergency care for walk-ins and offers both general and pediatric dentistry services. The dental clinic has been open for about 5 years in this location but there are still community members who are unaware of its presence.

About 60% of those treated at the school based health clinic are children. The pediatric dentists are booked out for two months in advance. A social worker is present at least once a week at the School #17 clinic to work with patients.

Dental providers at the clinic complete about 10,000 dental visits annually including between 300 and 400 new patients each year. The 6 dental operatories are staffed by Community Dentistry faculty dentists, 4 dental hygienists (1 of whom works part time) and dental assistants, 30 of whom rotate between the other community dental clinics sponsored by Eastman and the school based clinic, as assigned. The clinic also serves as a community rotation site for dental residents who are precepted by faculty.

The dental clinic at the school based FQHC is ideally designed with an outside entrance separate from the main school doors to allow community members to access clinic services without disturbing the education of the children. The dental clinic also has a common internal door with the school at the rear of the clinic that allows dental personnel to go to a student's classroom and escort a child to the clinic without leaving the school building. Students who are patients of record at the clinic can be treated during the school day, which is convenient for working parents.





The school dental clinic serves as a training ground for many of the dental residents at the Eastman Institute. The supervising dentist at that clinic requires that all dental residents rotating through the center learn not only typical skills but others including how to take a dental x-ray, a competency that is not commonly required of either dental students or residents since it is considered an auxiliary function. The school-based clinic also provides clinical rotations for dental assisting students. The school-based

dental clinic is one part of a continuum of clinics that constitute a comprehensive dental home for patients served by one or all of the component parts. The mobile units refer to the school-based clinic, to other community clinics or to the specialty clinics at the main dental center. The children in Rochester appear to be well served by the spectrum of available services. The main clinics at the Eastman Institute serve mostly adults although some clinics including orthodontics, pediatric dentistry, and oral surgery clinics serve children.

Workforce on the SMILEmobiles

The Division of Community Dentistry at EIOH, which oversees the mobile program, is staffed by 21 faculty, several of whom are active providers in the mobile program or in the school based dental clinic. It has been somewhat difficult to recruit and retain dentists for work on the mobile units because the salaries offered by the program are not competitive for pediatric dentists.

Eastman makes an effort to encourage diversity among the professionals hired by the program to assure representativeness with the population. Several of the dental assistants are bilingual and some dental assistants and program coordinators are Hispanic, African American, etc. Dentists who rotate through the mobile vans may also be from diverse backgrounds. Eastman has a program that prepares foreign-trained dentists for licensure in New York.

The Institute provides a career path for those with formal education in dental assisting. One member of the care team in the SMILEmobile program spoke of obtaining a dental assisting license from the state after 10 years of practice; she then assumed a role as a lead dental assistant/supervisor in one of the mobile units and eventually became a practice manager for the entire mobile program.

There are 2 pathways in the local area to formal training for dental assistants. One is a program at Monroe Community College and the other is a Board of Cooperative Educational Services (BOCES) program. The Eastman Institute host dental assisting students for clinical rotations.

There is very little turnover in the personnel on the mobile units. When someone leaves, it is generally for higher pay. The program is not competitive for salary but the benefits offered by the Institute are comprehensive and attractive. At the time of the case study, 2 dental assistants had given their notice. One was leaving after a 5-year tenure with the program and another after 12. Both were leaving for better paying jobs in the community.

Eastman takes advantage of the residency programs to recruit new dentists to the Institute. In addition, the residency program serves as a source of new dentists for the community. For instance, one of the pediatric residents who rotated through the mobile program recognized the need for a pediatric dental practice in nearby Batavia, New York. Upon completion of her residency, she established a practice in that community that serves children including those who are Medicaid eligible. Another resident purchased a practice in the local community from a faculty dentist; still others remain at Eastman or build local practices.



History of the Organization

Future Smiles is a nonprofit organization that offers preventive oral health care services to children both in fixed clinics and via a portable format in schools. Future Smiles is a dental hygiene group practice founded by a dental hygienist with an interest in increasing access to oral health services for vulnerable children.

Shortly after the Future Smiles founder graduated from her dental hygiene education program, she was employed by the Oral Health Program of the Nevada State Health Division as the coordinator of the state's oral health coalitions. Eventually, she became the coordinator of the statewide sealant program in Nevada schools. These experiences taught her the importance of sealants as well as the challenges of delivering sealant services, especially to underserved children.

As a result of this experience in public oral health with the state, she worked with a community partner to initiate a preventive oral health program at a school-based health center in Clark County, Nevada. In order to create a business entity to provide oral health services at the health center, the dental hygienist needed to collaborate with a community agency, Communities in Schools (CIS) for infrastructure support.

CIS is a national organization that works with at-risk students in public and charter schools across the nation to help them achieve personal and educational goals, including graduation. CIS collaborates with multiple community partners in each of its locations to build supportive programming to reduce dropout rates by encouraging student achievement. CIS places site coordinators in each school to work with partner programs providing a variety of services, including health services such as immunization. CIS in Nevada acted as the fiscal entity for Future Smiles when it was initially founded in 2009. Future Smiles was separately incorporated in 2010 and became an independent 501(c)(3), not-for-profit organization in 2011.

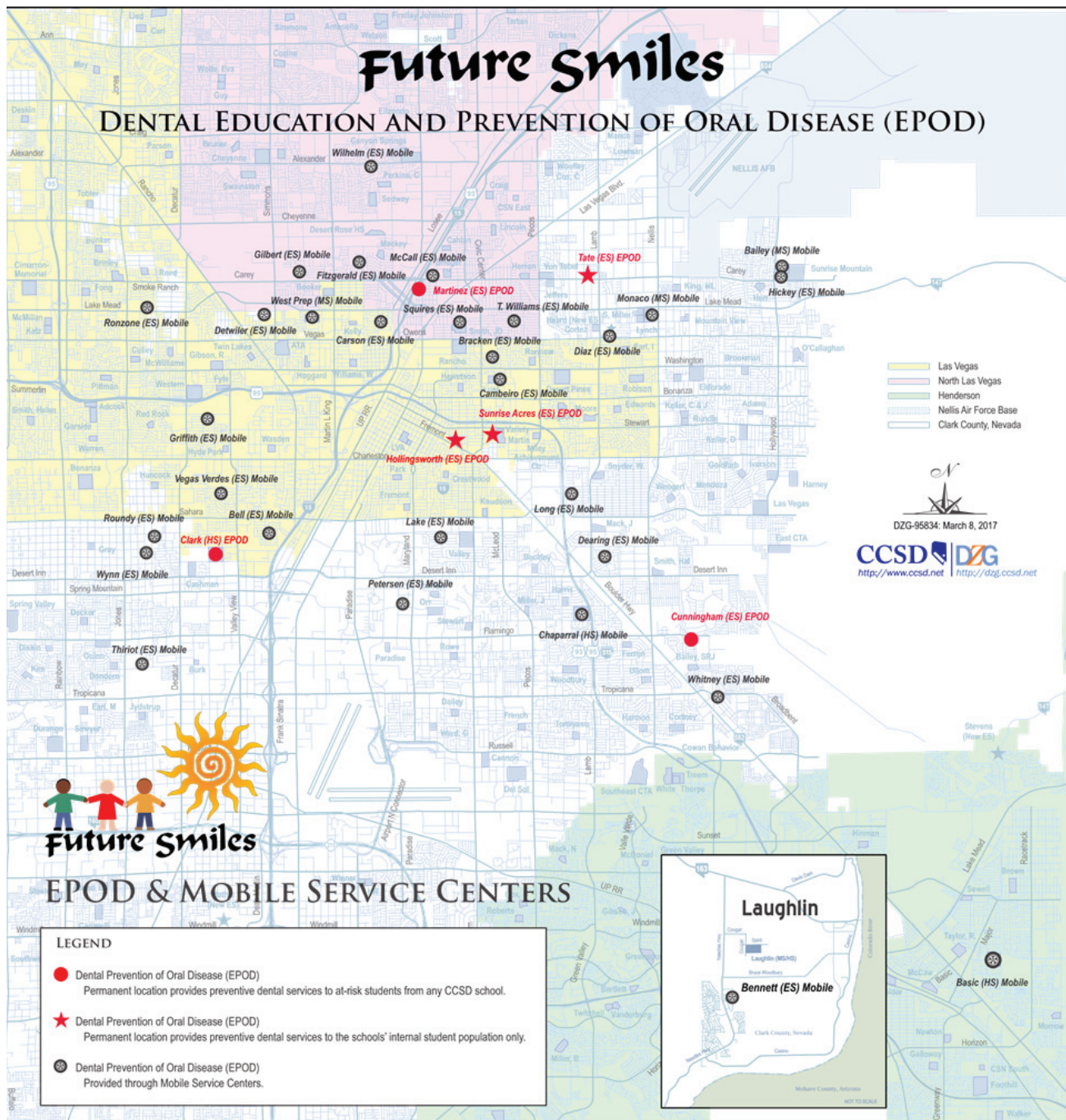
Las Vegas is the largest city in Clark County and in Nevada. Many residents in the county work in the gaming and travel industry in service occupations. Socio-economic disparities and other demographic factors in the Las Vegas metropolitan area are predictive of compromised access to health and oral health services for children and their families. Many of the programs affiliated with CIS, including Future Smiles, are designed to address unmet need for health, oral health, mental health, and social services in the student community.

The Clark County School District is the fourth largest school district in the nation, with more than 320,000 enrolled children in 351 schools in grades pre-kindergarten to 12. This number represents approximately 70% of all schoolchildren in the entire state of Nevada. The district's student population is very diverse: More than 43% are Hispanic, about 30% are non-Hispanic white, 12% are Black, and 7% are Asian. More than half (53.4%) of these students qualify by family income for the federal free and reduced lunch program. High school graduation rates in the district rank in the lowest third of all school districts in the nation. In 2013, the high school graduation rate was 71.5%.¹³

Future Smiles serves children in some of the 265 Title I schools in the Clark County School District; in several of these schools, between 90% and 100% of students qualify for the federal free and reduced lunch program. Many of these schools are majority-minority schools. About 60% of the children served by Future Smiles are Hispanic, 20% are black, and the remainder are White or Asian.

In addition to the schools in Clark County in southern Nevada, Future Smiles provides dental hygiene services in 10 schools in northern Nevada, including 5 in Washoe County and 5 in Lyon County, which are located several hundred miles from Las Vegas. The student population in the north is demographically different but economically similar to the student population in Clark County. Most of the students in the more northern schools are white, but many are also Medicaid eligible. The schools are in rural areas where there are many working poor and few dentists to provide services. Local employers include a military base, some mining companies, and agricultural concerns. Future Smiles employs a case manager who lives in the area; a dental hygienist provides preventive oral health services in the schools 2 days to 4 days each week during the school year.





Future Smiles in Schools

Future Smiles provides full preventive services, including complete prophylaxis, fluoride varnish, and sealant applications, in fixed clinics called EPODs (Education and Prevention of Oral Disease) in 5 district schools in Clark County. Two of these EPODs are in detached buildings on school property (1 is at a high school and the other is at an elementary school), which allows these clinics to be fully operational all year. Services are available in the 2 detached EPODs to any students in the school district and to any family in the school community.

The other 3 EPODs are in classrooms within elementary schools, so services are available only to enrolled students and only when school is in session. These fixed clinics provide elementary students with routine recall appointments for preventive services at 6-month intervals during the academic year.

The high school-affiliated clinic is located in an adjacent 1,500-square-foot, detached, modular building that houses 2 dental operatories and a storage area adequate to hold all supplies used in the several fixed dental hygiene clinics and for mobile services provided by dental hygienists and dental assistants working with Future Smiles. Future Smiles has “no-cost” lease arrangements with the district for these fixed clinics. The school district also provides the water, electricity, and maintenance for the dental hygiene clinics as an in-kind donation.



Each of the EPODs is decorated with a different theme selected to be pleasing and fun for children. One has a forest theme; another is decorated with Pokemon; and still another has a Star Wars motif. School mascots and stuffed animals are featured throughout each clinic. Students are scheduled for dental hygiene services based on their classroom schedules. The program attempts to cause as little disruption to the educational day as possible. A dental assistant goes to each classroom in the elementary schools to escort children to and from the EPOD. Older children do not require an escort.

Portable Preventive Oral Health Services in Schools

In addition to the fixed clinics, Future Smiles provides portable oral health services in Clark, Lyon, and Washoe counties. Dental hygienists employed by the program serve children in 33 elementary schools, 1 middle school, and 1 high school in Clark County; in 2 elementary schools, 1 middle school, and 2 high schools in the Washoe County School District; and in 5 elementary schools, 1 middle school, and 2 high schools in the Lyon County School District. In some schools, the services are mainly dental sealants. The portable dental hygiene services are provided only to children enrolled in those schools. About 4,700 children with varying oral health needs receive services each academic year in the fixed clinics and through portable delivery. Approximately 20,000 children also benefit from oral health education services provided by Future Smiles dental hygienists in the schools each year.

A small percentage of children in targeted schools have special needs, but these are easily accommodated through specialized training focused on scientifically based relaxation techniques to eliminate patient's fear. Dental hygienists and 3 of the dental assistants employed by Future Smiles completed the Oraspa™

touch therapy curriculum and are certified in Oraspa's Calms Kids™ therapy, which is dedicated to reducing dental anxiety and fear in children. These certified dental hygienists and dental assistants can better deal with anxious children using sensory aids such as white noise, soft music, and dimmer lighting to relax fearful children. Individual accommodations may include the use of a blanket to make a child with autism feel cozy or a vibrating pillow, which some children find soothing.

Future Smiles currently counts about 9,000 children as patients of record. In the 2016-2017 academic year, 1,775 children (39% of patients) were identified by dental hygienists as needing intensive case management services for a variety of reasons usually related to treatment needs. Future Smiles personnel, especially the case managers, work closely with parents, CIS coordinators, school nurses, social workers, and school administrators to ensure that children receive dental treatment services, especially when the need is urgent or emergent.

Future Smiles has worked hard to help children find dental homes, especially those with a need for treatment services. As a result, there is little pushback from the local dental community with regard to the work of Future Smiles in the schools. There is general recognition among dental providers of the value of these services to the children in Clark County and acknowledgment of the efforts of the program to work with community dentists. Future Smiles has developed a dependable referral network for students identified as having dental treatment needs during dental hygiene assessment and screening in the schools.

Case study participants discussed the importance of building personal and professional relationships with community dental providers to sustain a viable referral network for community-based oral health programs like Future Smiles. The founder of the organization makes presentations about Future Smiles to many community groups, and program leadership maintains active communication with administration in the schools, with the board of dental examiners, and with the many funders who provide financial support to sustain the services for children.



Because Medicaid reimbursement rates for children's dental services are relatively reasonable in Nevada, several pediatric dentists will accept referrals from Future Smiles dental hygienists. Future Smiles also refers patients to the dental clinics in several federally qualified health centers (FQHCs) in surrounding areas and to other private dental providers who will treat at-risk populations. Dental Care International operates a clinic in Las Vegas that has a pediatric

dentist and primarily treats the uninsured and the working poor, so some students are referred to that clinic.

In an effort to provide comprehensive restorative dental treatment, Future Smiles will pay a dentist for dental treatment services that parents cannot otherwise afford and when there is no other resource. These dental providers offer their services at reduced rates to children from families with limited resources and some will provide pro bono services. For example, one endodontist will provide services to children referred by Future Smiles at 50% of the regular fee. Several funders including The Rogers Foundation and Elaine P. Wynn and Family Foundation will provide funds for children in need of sedation dentistry. The school district has some funds through Project Smile, which is supported by MGM Resorts Foundation, to pay for oral health treatment services.



Future Smiles works diligently to keep all community partners informed about the types of services provided and the numbers of children served. Each school receives an annual report describing the services provided to enrolled students, along with the disposition of children who need further dental treatment. All sealant placements and sealant program activities are reported to the state of Nevada. In addition, Future Smiles seeks feedback about their program from their constituents and partners. Parents and teachers are routinely surveyed about their levels of satisfaction; most express high satisfaction with the program.

Financial Support for Future Smiles

Future Smiles has an annual budget of approximately \$960,000. The organization is primarily supported with grant funding from a variety of private foundations, most of which are headquartered in the Las Vegas area, including the Elaine P. Wynn and Family Foundation, DentaQuest Foundation, MGM Resorts Foundation, The Rogers Foundation, Golden Nugget, Cirque du Soleil, United Way of Southern Nevada, Nevada Energy Foundation, Nevada Community Foundation, William N. Pennington Foundation, John Krakauer Foundation, and others. Many of these awards require annual application, but many of these grantors have funded Future Smiles for multiple years.

Future Smiles mainly provides services to children who are eligible for Medicaid or the Children's Health Insurance Program (CHIP). Students served by Future Smiles also include immigrant children who are ineligible for Medicaid or CHIP benefits and thus are uninsured. Approximately 53% of the parents who provide permission for their children to receive preventive oral health services indicate that their child is Medicaid insured. However, when Medicaid eligibility is reviewed through the state verification system (a routine activity), only about 38% of these children are actually currently eligible for benefits. Parents sometimes neglect to re-enroll annually as required.

Future Smiles bills Medicaid for services to eligible children but recovery is problematic. In the 2016-2017 school year, 38% of the children served by the program were Medicaid enrolled recipients and 59% were uninsured; 1% had inactive Medicaid enrollment and 2% had private insurance. However, only 22% of eligible children were covered by a Medicaid managed care company willing to accept billing from the Future Smiles program. The Nevada Medicaid program has both a fee for service administrator (FFS) and 2 managed care administrators (MCO); one of the MCOs refuses to pay Future Smiles directly for dental hygiene services. The FFS administrator and the other MCO have contracted with Future Smiles since 2010. In 2018, a new, single payer, Nevada Medicaid administrator will be selected by the state; currently all-dental MCOs have ended their Nevada Medicaid contracts and only the FFS is active.

Of the nearly \$1 million annual budget for the program, only about \$61,000 is from revenue recovered from services to Medicaid-eligible children. The program is mainly reliant on philanthropy and grants from the several Las Vegas foundations that recognize the importance of oral health services for children in local schools. Several of these foundations are supported by revenues from the casinos at which the parents of the schoolchildren treated by Future Smiles work.

The Sealant Program and Future Smiles

Future Smiles continues to manage its sealant program in 50 schools using mobile equipment. The Nevada Medicaid program funds the placement of sealants on premolars and services are available to any child enrolled in the schools. Over time, Future Smiles has placed close to 49,000 dental sealants on the teeth of Nevada schoolchildren.

Future Smiles visits its assigned schools on an annual basis. A dental hygienist provides oral health education to the whole school about 1 month in advance of sealant applications. Each child receives a “smile bag” containing toothpaste, a toothbrush, a sticker that reads “sign me up,” and a parental consent form. The school nurse or CIS affiliate or coordinator in the school help with the collection of the permission forms. The dental hygiene team arrives at the school about 2 weeks after permissions for sealant services are returned. The 5-year agreement between Future Smiles and the Clark County School District includes a provision that all enrolled students, whether insured or not, will be provided the option to receive services. In a typical year, between 10% and 20% of elementary school students in Clark County receive one or more dental sealants through the sealant program.

The program serves any child whose parent provides consent. The permission form suggests that children with a regular provider should seek services from the dental home rather than from the sealant program. However, some parents either do not want or are unable to pay the copays required by some commercial dental insurances for sealant services. Others find it difficult to take time from work to transport their children to the dentist. Because the grant funding supports the provision of sealant

services to any student enrolled in a qualifying school, sealants are placed whenever the parent provides permission, unless there are clinical contraindications (eg, noticeable decay).

Technology

Future Smiles uses Dentrix software as its electronic dental record system. All patient encounters are recorded in the electronic dental record at point of service. Each of the dental hygienists working for Future Smiles is provided with a laptop computer and a wireless hotspot. Patient information is accessed through a secure cloud by the program's dental hygienists or by other program personnel, such as case managers. The dental record includes a tooth chart, clinical notes, an e-claims module, an appointment and alert system, and a patient demographic module. Each child's information includes his or her student ID number, which enables integration of the child's oral health information into the individual school health record.

On the day of the case study, the founder of Future Smiles demonstrated the robust capabilities of the Dentrix software and its various uses by program personnel. Children in need of case management services are identified by dental hygienists and earmarked for action within the software program. Future Smiles personnel have developed efficient communication pathways and have identified routines to ensure that all children are appropriately followed to service completion. The software has been customized for Future Smiles management to produce numerous reports for stakeholders that are useful for mandatory reporting and for grant applications.

Workforce

All dental hygienists who work with the program have a public health dental hygiene endorsement from the Nevada State Board of Dental Examiners. Each dental hygienist submits an application to the board that includes the Future Smiles' protocol describing the populations to be served, the expected range of services, and the established referral mechanisms for patients in need of treatment services beyond the scope of dental hygiene. The public health endorsement is designed to allow dental hygienists to provide preventive oral health services in public health and community settings. There is no requirement for a collaborating dentist.

Future Smiles has 16 employees, most of whom are full time. There are 4 part-time dental hygienists and 2 other part-time personnel. A dental assistant acts as the Occupational Safety and Health Administration (OSHA) manager; a dental hygienist is the manager of the mobile teams; and a dental hygienist manages the 5 EPODs. Four dental assistants work with the dental hygienists in the program. One dental assistant serves as the inventory manager for program supplies held in the central annex at the Clark EPOD. She

coordinates with other dental assistants to be sure that each location or mobile team has the needed supplies.

Future Smiles has had little difficulty either recruiting or retaining personnel. Future Smiles provides its employees with a robust set of benefits including professional development, malpractice and general liability insurance coverage, workmen's compensation insurance, and a fair-market salary. The program has experienced some turnover, mostly related to changes in career paths or to other life transitions. Future Smiles attempts to pay salaries commensurate with the local market rate. Dental hygienists who work in the schools also have the option to not work in the summer while schools are on hiatus, which is appealing to some staff. Others prefer to work all year and provide services to summer school programs, such as Zoom School, which provides extra programming for needy students throughout July.

Health Promotion Specialists

Lexington, South Carolina

Introduction

Health Promotion Specialists (HPS) is a for-profit company headquartered in Lexington, South Carolina, that provides preventive oral health services in schools. A dental hygienist founded the organization in the year 2000 with a mission to address the lack of access to oral health services among underserved populations in South Carolina, especially among children. In that year, the South Carolina legislature passed a law eliminating the requirement for dental permission to supply preventive services. This enabled public health practice for dental hygienists to provide services within their education and competencies in schools and other community settings. HPS was established in December of 2000 using borrowed funds to purchase equipment.

The organization has grown substantially in the years since its founding. HPS is currently a provider of preventive oral health services to schoolchildren in 46 school districts throughout the state. The organization collaborates with the South Carolina Department of Health and Environmental Control (DHEC) to provide the state-required oral health screenings for kindergarten, third-grade, and seventh-grade students. In addition, HPS has a memorandum of agreement with each of the school districts in which it provides services to offer preventive oral health services to children in those and other grade levels. HPS's dental hygienists provide services to children in Head Start programs and kindergarten through twelfth grade. Each school is visited at 6- to 9-month intervals, but the time within the year may vary. For instance, the dental hygienist may see students in a given school in January of one academic year but may not revisit the school until October of the following academic year.

HPS currently employs 17 dental hygienists who work throughout the state in school districts proximate to their personal residences. The organization provides oral health services to about 23,000 students each year. There is significant need in many of the districts; some students who receive services have never seen a dentist, because finding a dental home for those who are publicly insured or uninsured is difficult in the state. As school-based health centers are rare in South Carolina, any health or oral health service must be provided in a portable format. There are 3 mobile programs using dental vans on a limited basis in South Carolina in addition to a school-linked oral health program in 7 schools in Marion County similar to that sponsored by HPS.

HPS providers have been in schools for 17 years. During that time, some children who have needed only preventive services have established a dental home in the program. HPS's dental hygienists have provided

periodic, routine preventive services as these children have progressed through school. These services have resulted in many healthy mouths. During the case study, one of the HPS's dental hygienists spoke of a student who had initially received services in the early grades with very poor oral health and significant decay in the deciduous teeth. As the permanent teeth emerged, the dental hygienist was careful to place sealants on each, to provide routine preventive services as the child grew, and to instruct the child on appropriate oral hygiene. She commented that she found it very satisfying to still be providing services to the same child, who now has no dental decay and a brilliant smile, in high school.

Mobile Services in Schools

The school nurse and administrative staff in each school help to obtain parental permissions for the preventive oral health services for enrolled children. Oral health services are provided only with parental permission and mainly to children who do not currently have a dental home in their community. Permission forms are disseminated to parents according to the preference of each school district. The forms may be available online on the district website; a paper form might be included with other permissions in the student registration package; or it may be included when the health/first aid forms from the district are sent by mail or through children to parents. In some districts, individual teachers are responsible for sending the permission slips home through the students in the classroom.

In some schools, there is a fixed space designated for the dental hygienists to build their operatory using portable chairs and dental equipment. In other schools, the designated space varies depending on space available on the particular day or week that the dental hygienists are scheduled. One school administrator who was interviewed for this case study commented on the regrettable circumstance of not having predictable and usual space for the program due to the overcrowding in his district's schools. He expressed appreciation for the flexibility of the dental hygienists, saying that they were extremely agreeable and willing to work on cafeteria stages, in an empty office, or in some other vacant space, which varied from school to school within the district.



Case study informants commented that in many schools in which the program provides services, space is at a premium because of increased enrollments. Dental hygienists are experiencing greater difficulty than in the past with finding available space to locate the chairs. One common option is the stage in an auditorium or in the cafeteria area, which can usually be made private by closing the curtain or using a partition.

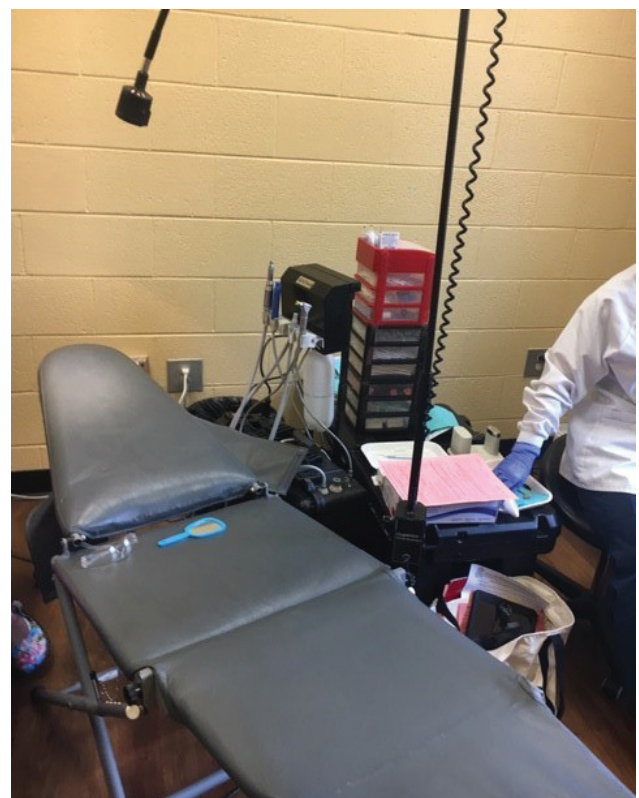
Typically, 1 or 2 dental hygienists work in each school and transport the needed equipment—water supplies, dental chairs, equipment carts, and so on—from place to place. Each dental hygienist carries enough sterile supplies to see a full complement of students each day. Each also transports a container with enzymes to hold used equipment. All of HPS' dental hygienists have autoclaves at home to sterilize dirty equipment.

On the day of this case study, one of the examination rooms in the nurse's office in a middle school in a rural consolidated school district was converted to operatory space for 2 dental chairs. Two dental hygienists were simultaneously providing services to children, while 2 other students waited patiently in chairs in the adjacent nurse's office. Appointments typically last between 15 and 40 minutes, depending on the extent of the services.

The nurse was managing patient flow to allow the dental hygienist maximum efficiency to provide services to as many children as possible. Appointment times are selected based on each child's elective/ arts courses in a day; it is everyone's preference that children not be pulled from core classes. Small children are escorted to and from their classrooms, while older children may come to the operatory on their own. It was apparent that school staff, including front office personnel, the teachers, and the nurse, were cooperative with the program and recognized its importance to the students.

Services

The dental hygienists employed by HPS provide oral health education, including tobacco and nutrition counseling, in classrooms and to individual students. The classroom presentations are age appropriate. In classrooms with younger children, the dental



hygienist uses a stuffed dinosaur to engage the students with the subject of oral hygiene. Dental hygienists also attend career and health fairs in the communities they serve in order to educate adults on the importance of oral health for themselves and their children.

Services provided to individual students include dental hygiene examination, oral health screening and assessment services, prophylaxis, fluoride varnish application, and dental sealants. The dental hygienists conduct a caries risk assessment on every child using the protocol developed by the American Academy of Pediatric Dentists and the screening tool of the Association of State and Territorial Dental Directors. Each child receives a dental hygiene assessment. Every child who receives a service also receives a toothbrush and toothpaste.

The dental hygienists treat children with a range of health care needs and conditions, including developmental disabilities and autism. Children are more comfortable receiving oral health services in the familiar school setting. In addition, the dental hygienists working for the organization have extensive experience working with young people. One of the dental hygienists interviewed for this case study had been practicing for 27 years; she currently provides dental hygiene services for children in 28 different schools. She commented that children are generally excited to receive services because they know her and are comfortable in the school setting, and all enjoy the “goody bag” that they receive when services are complete.



Each child is given a report describing the preventive services provided by the dental hygienist along with any recommendation to see a dentist for treatment services. The dental hygienist also attaches a list of provider options that includes the names of dentists in the local area who have agreed to treat publicly insured children. When urgent problems are noted, the dental hygienist will individually notify the parents. One dental hygienist commented that each of the dental hygienist working in the program includes her telephone number on all communications to parents. Parents will call to ask for clarification about a referral and where to seek services.

School nurses and the dental hygienists follow those children who require treatment to ensure parental follow-through. When a child returns for a visit and the dental hygienist notes that the recommended treatment has not been received, she or the school social worker will contact the family directly. On rare occasions, parents must be reminded that failing to take a child for treatment is considered neglect and, as such, is reportable to social service agencies. The dental hygienist and the school nurse will work with parents to find appropriate resources for dental services. HPS has established a separate not-for-profit foundation called Smile Specialist to help pay for urgent treatment services for children whose parents cannot afford such services. Many of the dental hygienists who work for HPS contribute to the foundation.

Each dental hygienist uses a common electronic dental record system to maintain patient dental records. HPS continues to customize the dental record system and has recently implemented new functionality using FileMaker to record and collect patient data for specialized reporting purposes. The algorithms in the program populate compulsory reports. HPS provides screening and assessment data to the South Carolina Department of Health and Environmental Control to help them meet their federal reporting requirements. HPS has a memorandum of agreement with DHEC, and they adhere to DHEC regulations in their conduct of services. All files are backed up on a regular basis.

The system is also used for administrative and management reports and for billing purposes. HPS was using the Dentrax Enterprise system but found it difficult to customize to the needs of the organization. The current software has been tailored to fit the portable nature of the program. Each of the IPADs used by the dental hygienists also has Global Positioning System software, which logs the dental hygienists into the schools so that HPS management can locate a dental hygienist as needed at any time on a daily basis.

There is not much turnover among dental hygienists employed by HPS. Some have been with the organization almost since its founding. HPS has an administrative person who manages all of the billing and receivables for program services. The founder and her program director are intimately involved with day-to-day operations, working directly with the dental hygienists to manage all aspects of service provision.

Most of the children treated in the program are Medicaid eligible. Each dental hygienist has a national provider identifier (NPI) and the group also has an NPI. The organization includes a supervising dentist who bills Medicaid for the services provided in the schools, but all revenues come directly to the organization. Dental hygiene assessment services are included along with other services even though they are not reimbursable. Medicaid reimbursement rates in South Carolina have dropped 6 times in the last 8 years, which is beginning to jeopardize the financial sustainability of the program. At the time of the case study, the managing dental hygienists were concerned that the contraction in reimbursement from Medicaid would force curtailment of services in many of the schools. However, in a recent action, the

state Medicaid program authorized small increases in the reimbursement rates for preventive and oral surgery services effective July 1, 2017.

At the time of the case study, dental hygienists were hoping that a pending bill allowing dental hygienists in the schools to apply atraumatic restorations would be passed by the legislature. There was a groundswell of support for the measure from the public health community, the nursing home association, and advocates for the underserved.

Advocates for a Health Community

Jordan Valley Community Health Center

Springfield, Missouri

History and Background of the Organization

Advocates for a Healthy Community, operating as Jordan Valley Community Health Center, is a federally qualified health center (FQHC) headquartered in Springfield, Missouri, with satellite health centers in Marshfield, Hollister, Republic, and Lebanon. Each health center provides integrated medical, dental, and behavioral health services for patients. In addition, Jordan Valley sponsors a dental clinic in Forsyth, Missouri, and a medical clinic at a second location in Springfield. The US Health Resources and Services Administration (HRSA) designated Jordan Valley as an FQHC in August 2002 after a 10-year planning process and a needs assessment supported community need. Jordan Valley operated in temporary quarters until January 2003, when it opened its first clinic. The health center, which is located near the Mark Twain National Forest, now has more than 300 employees working in its affiliated health centers and mobile programs.

The main health center occupies more than 105,000 square feet of space in a modern glass and brick building in downtown Springfield and offers a broad range of health services comprising a comprehensive health home for patients. Co-located services in the main health center include:

- Women's health
- Optometry and optical dispensing
- A Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), operated by the Springfield-Greene County Health Department
- A primary care medical clinic
- A pediatric clinic
- A behavioral health clinic
- A dental clinic
- A pediatric dental clinic
- A pharmacy
- A hospital-grade laboratory
- Dental urgent care



- Express care
- Nutrition services
- Operating suites for basic ambulatory medical procedures and oral surgery

The main health center also houses a central sterilization unit that manages sterilization and distribution of medical and dental instruments for all locations operated by the health center.

In 2016, the FQHC provided services to 52,000 people during 130,000 patient encounters. In 2015, 57% of the services provided by all affiliated health centers were dental services. In that year, 98% of patients reported incomes below 200% of the federal poverty level; 89% of patients were non-Hispanic white, and the remainder were racial or ethnic minorities. The catchment area includes people whose first language is Russian, Burmese, or Spanish.¹⁴

Nine percent of the revenue to support the operations of the FQHC is from grant money, and the remaining 91% is from patient service revenue. Between 67% and 71% of revenue is from services to Medicaid patients; 12% to 15% is from commercial insurance; about 4% is from Medicare; and the remainder is from self-pay and uninsured patients. Services are provided on a sliding or reduced-fee basis to those who are income eligible. The main philanthropic event for Jordan Valley during the past 7 years is an annual 5K run. The proceeds from this event are used to finance health services for patients who cannot otherwise afford them.

Structure and Mission of Jordan Health Center

The health centers at Jordan Valley are physically structured to provide convenient, continuous, and integrated care under a single roof, which is unique in the area. Case study informants commented that they are continually surprised at how little the local community knows about the comprehensive services available at the health center and its several affiliate clinics, making ongoing community education and outreach very important.

The center has found numerous ways to engage people in the local community who need health services. One informant discussed dental as an “open door” to the engagement of patients to receive multiple services at the health center. The interview participant explained that a person’s oral health is often more readily observable than many aspects of physical health. Thus, providers who observe oral conditions during examinations or during community screening and health fair events and engage patients to receive dental services at Jordan Valley can also have a conversation about the availability and range of other health services available at the FQHC.

Two patient advocates sit at high-top stations in the main reception area of the Springfield health center to assist both new and existing patients with questions about housing, transportation, medical insurance benefits, and local community resources. The reception area includes a café and a play area for children with a 2-story pirate ship and an aquarium. There are multiple reception areas throughout the very large health center and several different entrances with convenient parking.

Each clinic has separate staff to manage check-out and future appointments. Call centers remind patients about appointments. The health center also sends text-message reminders to patient cell phones and push notifications using Demandforce to ensure appointment compliance. In addition, the electronic health record has a patient portal that contains health and dental information, laboratory results, appointment information, and other data.

The FQHC is managed by a team of clinical and administrative personnel with a mission of serving those with limited access to health services. To help staff at the FQHC understand the real difficulties that patients with limited access to transportation experience in accessing health services, staff were asked to participate in a recent patient experience project. Each participant was instructed to access the local bus system from his or her home in several different neighborhoods in the Springfield area to travel to work at the health center.

Staff discussed a newfound appreciation for the difficulties encountered by health center patients in arriving on a timely basis for scheduled appointments. Informants commented on the challenges of using a “convoluted” public transportation system, especially for those patients whose primary language is not English. Staff commented on multiple bus changes across routes to access the health center and the difficulty of navigating bus schedules that were not well timed or that required long waits between transfers. The FQHC has a longstanding policy that if a patient arrives late for an appointment, they are still to be seen that day, even if the provider cannot complete all originally planned services.

Comprehensive Health Home and Efforts to Integrate Medicine, Dentistry, and Behavioral Health Services

Each of the affiliated health centers operates on an integrated model of care delivery. Integration is achieved through a variety of mechanisms, including an integrated electronic medical and dental record on the NextGen platform and concerted efforts by the entire professional team at integration in all health service areas.

Each health service area within Jordan Valley’s health centers is organized around a “pod,” or team of health workers, that is constituted to provide comprehensive care within each specialty or primary care area. A behavioral health consultant who is a licensed clinical social worker is placed on every clinical team

so that any patient who needs a social service or a behavioral health service—whether in the area of pediatrics, primary medicine, obstetrics, or dental—can be easily counseled.

Case study participants discussed a “hands-on approach” to providing comprehensive health services, describing how providers from different professional disciplines worked together at the various health center locations. An obstetrician might talk with a pediatrician about a baby that was recently delivered, or a pediatrician might talk with a dentist about the oral health of a child in care. Pediatric dentistry residents were routinely called to the pediatric health clinic by a pediatrician to examine a child’s teeth. Another example of efforts to integrate oral health was that one part of the 8-week prenatal class sponsored by the women’s health clinic was a presentation by a dental hygienist about the importance of oral health both during pregnancy and after birth.

The FQHC offers free pregnancy screenings for anyone, regardless of patient status. The women’s health clinic is staffed by obstetricians/gynecologists and nurse midwives who provide all prenatal care and have attending status at the local hospital to deliver babies. Pediatricians from the health center also have hospital privileges, so that babies born to health center patients have a medical home from birth. Birthing classes are provided free of charge to women and their partners. The WIC clinic, which is physically located in the health center but sponsored by the county, provides cooking classes conducted by a nutritionist for new mothers and oral health screenings for mothers and children, with referrals to the dental clinics at the health center.

The pediatric clinic provides many well-child services. Each child receives a pack of diapers (if appropriate) and a book at every well visit. The pediatric health care team distributes books to all young children in the clinic from birth to 5 years of age through a literacy program that is supported by a grant and by private donations. The pediatric clinic holds a back-to-school event each year just prior to the opening of local schools. Parents and children enjoy the convenience of walk-in services for school physicals and immunizations, sports physicals, and dental screenings. The health center makes it fun by having superheroes in the reception and clinic areas and by arranging for entertaining craft activities for the children.

Case study informants provided an example of how their efforts at service integration have affected the local community. Silver Dollar City is a theme park in nearby Branson, Missouri; the park mostly employs temporary workers in the entertainment venues and amusement area that comprise the park’s attractions. Silver Dollar City employs a registered health nurse who walks throughout the park on a daily basis to talk with workers about their health needs. Over time, she has become familiar with many of the park’s employees.

When the registered nurse finds a worker with a toothache or notices visible decay in the mouth, she calls Jordan Valley to refer the patient. Jordan Valley, having observed the considerable need in the worker

population, began to send the mobile dental unit to provide dental screenings at Silver Dollar City. Patients in need of more extensive treatment services than could be provided in the van were then referred to the Hollister health center, one of Jordan Valley's satellite clinics in the Branson area. Jordan Valley has now established a school-based health center in the school district where the children of workers at Silver Dollar City are enrolled.

Dental Services at Jordan Valley

Jordan Valley Health Center has 70 dental operatories located variously in the main health center in Springfield and in the satellite dental clinics. The center in Springfield contains 40 of these operatories, 11 of which are located in the pediatric dental clinic. The remainder are in the urgent care and adult dental clinic, where each dentist simultaneously rotates through 3 operatories with the support of 2 dental assistants. Several of the dental assistants at the health center are certified to perform expanded restorative functions in Missouri. This allows the dentist to delegate placement and carving of restorative materials in a prepared tooth to a qualified dental assistant and to then move to another patient.

In addition to scheduled patients, the dental clinics in each health center also accommodate walk-in patients. Express dental care for adults is provided between 8:00 AM and 5:00 PM daily, with services after 3:00 PM limited to palliative care. However, a child who presents with a dental complaint is treated in the pediatric dental clinic regardless of time of arrival.

On a typical day, as many as 40 people seek unscheduled or emergency dental services. While so many walk-ins could be problematic from a resource perspective, the no-show rate for adults for scheduled appointments in the dental clinic averages about 30% each day. This results in available capacity to meet the urgent needs of emergency patients. On one morning during the week of this case study, 13 new patients failed to show for appointments between 8:00 and 10:00 AM at the main dental clinic. Because the health center has a policy that it will not double-book appointments, no-shows have the potential to be problematic. However, the unmet need for oral health services in the local community is sufficiently great to enable the clinic to remain efficient. As a result, the 40 operatories at the main health center are generally fully utilized.

The Springfield health center houses 3 Panorex imaging machines, one in the urgent care clinic, one in the pediatric dental clinic, and one in the adult dental clinic. In addition, the adult dental clinic has a 3-D cone beam imaging machine that is used for patients in need of implants. The dental clinic is now providing implants at reduced cost to patients.

An oral surgery suite is situated adjacent to the adult dental clinic. Two oral surgeons (1 of whom works full time and the other part time) and an anesthesiologist provide surgical services for special-needs

children and adult patients. They are supported by 4 dental assistants. Approximately 5 patients have surgery each day from Monday through Thursday, and 4 patients are treated on Fridays.

The oral surgery center is in extremely high demand; it receives approximately 30 referrals a day from community dental providers throughout the state. As a result, there is a substantial waiting list for surgical services. Because of the very high demand for these services, the health center has made a concerted effort to reduce the no-show rate among oral surgery patients. Each patient or family is contacted prior to scheduled surgery and asked about transportation.

The health center will provide transportation on the day of surgery if needed. Some patients from as far as 2 hours' distance have been driven to surgery and home again by center staff. Several health center vehicles are available for transportation; in addition, staff are willing to act as drivers, including community health workers and others who work in maintenance or in housekeeping. The health center provides cab vouchers and bus passes for patients as well.

The need for dental services is high in the local population. Over half of all patients seen in the main health center and its satellite clinics are dental patients. Informants discussed the poor oral health that is evident in some communities. They described high school students in need of dentures because of whole mouth decay. Informants spoke of one young woman who was screened and found to need whole mouth restoration. Jordan Valley dentists agreed to provide the services at no charge because the girl was uninsured. Although the young woman was initially reluctant due to anxiety over the extensive work, she finally consented to have her 4 front upper and lower teeth restored and the back ones repaired. As a result, she was able to smile for her senior pictures, something she had not previously been comfortable doing.

The FQHC received an emergency department (ED) diversion grant to provide dental services to patients who arrived at a hospital ED with a dental complaint. When a patient presented at an ED with dental pain or infection, the patient was given a voucher for services at one of the several dental clinics operated by Jordan Valley. Between November 2, 2015, and January 31, 2017, there were 3,233 referrals from various hospital EDs, resulting in 1,557 patients seeking services. Jordan Valley is working directly with CoxHealth and Mercy Hospital on the 3-year project.

These appointments resulted in 3,107 tooth extractions; the value of those services was approximately \$482,000. While the vouchers were intended for one-time use, many patients who received them qualified for Medicaid benefits, so the services were billable and the vouchers could be used for other qualifying patients. Patients were either unaware of their eligibility or unaware that Medicaid paid for dental services. Patients are continuing to use the ED for dental complaints in some high-needs areas in the surrounding counties. As a result, grant partners have subsequently discussed the utility of parking

the mobile dental vans operated by the FQHC at certain of the affiliated hospitals to provide dental services on a routine basis.

The unused vouchers have been redeployed to provide services for people in need of oral health care services before they present at an ED. This is considered a preventive strategy to address unmet need in dentally underserved communities. The mobile dental program conducted dental outreach in neighborhoods in low-income areas to provide free dental services to people who did not qualify for Medicaid but were in need of dental treatment services. These outreach efforts also found people in the community in need of care who were both eligible for Medicaid dental benefits and in need of treatment services but were unaware that they had coverage for dental services.

Because the dental services available through the Jordan Valley dental clinics are comprehensive, it is rare to refer patients to the community for dental services. Some exceptions include patients with extensive endodontic needs and children in need of orthodonture. Dentists at Jordan Valley provide some orthodontic services for self-pay patients at a reduced rate, but when extensive correction is needed, the patient is referred to a community provider.

Medicaid Policy in Missouri

Missouri does not reimburse health centers on a prospective payment system. Instead, the Medicaid program uses an alternative payment methodology that pays qualified health centers for services on an enhanced fee-for-service basis that adjusts for the costs to the health center for providing the services. Medicaid has contracted for administration of the dental benefit to 3 managed care companies in the state: Home State Health, Missouri Care, and UnitedHealthcare.

The Missouri Medicaid program provides a limited adult dental benefit to those individuals not eligible for a comprehensive dental benefit. The limited dental benefits covers examinations, prophylaxis, restorations, and extractions. Services not covered by Medicaid are still available, but the patient would be responsible for payment. Jordan Valley offers a sliding-fee scale to patients who qualify by income to help with the cost of noncovered services.

Mobile Health Programs

Jordan Valley began providing mobile health services in 2010 after the death in an automobile accident of an inspirational nurse practitioner who practiced at the health center. The nurse practitioner, named Gertrude (Trudi), was a staunch advocate for people in the local community with limited access to health services. She was inspired with the necessity of more conveniently situating health services to meet the needs of the underserved, and she dreamed of mobile health service delivery. Because of her visionary

legacy, and coupled with generous philanthropic donations from a variety of sources, Jordan Valley was able to purchase and equip 3 mobile vans to provide mobile health services. These vans were named for Trudi's children, and the mobile program was named Trudi's Kids Mobile Medical in tribute. The program provides well-child care under the Healthy Children and Youth program in schools in Springfield.

The vans serve children in Springfield public schools from birth to 21 years of age who lack access to a primary care physician. The vans also provide services on an as-needed basis, regardless of insurance status. A registered nurse and a nurse practitioner staff each van and collaborate with a physician to provide a range of health services, including physical examinations, immunizations, vision screenings, health education, sports or camp physicals, laboratory testing (including rapid strep screening), and referrals for more complex medical services. The vans are also used to conduct asthma clinics (performing routine health checks for asthmatic children), to provide supplies, and to offer disease management education. The program has subsequently expanded to include more vans offering vision and dental services.

One of the vans is outfitted to provide optometry services. It is equipped with a selection of Medicaid-approved frames and with a variety of lenses. This permits the optometrist to also dispense glasses when it is determined that a Medicaid-eligible child needs corrective lenses. Dispensing can happen on the same day as diagnosis.

Jordan Valley is presently contemplating the utility of providing mobile behavioral health services using a group-counseling model for children. It is important to the health center that they not duplicate services already available in local schools (eg, through school counselors or school social workers) or communities, but in some areas, there is a significant need for behavioral health services. Because substance use is a problem in many places and children may be living with addicted parents, mobile services may be useful to affected schools.

Two other vans, one called Hope and the other Fred, are equipped as mobile dental units. These vans serve a different population than the health vans, as another mobile dental program serves children in the Springfield school district. Jordan Valley recognizes that the need is great and duplicate mobile dental services in a school district would not be the best use of resources. Mobile dental services are instead provided in schools in a 7-county catchment area (Greene, Laclede, Webster, Stone, Taney, Christian, and Douglas Counties) that includes 26 school districts in southwest Missouri. The mobile van also visits 2 children's homes, one for boys and the other for girls. The Skaggs Foundation of CoxHealth in Branson provided \$450,000 for the Fred mobile unit that specifically serves Stone and Taney counties.

A dentist and 2 dental assistants staff the vans, each of which contains 2 dental operatories that allow for comprehensive dental services. The vans do not offer root canals or impressions for prosthetic devices.

Each van is equipped with laptop computers for patient dental records and Nomad portable x-ray equipment. However, some schools are located in very rural areas where Internet connectivity is often compromised, making it necessary to maintain paper records until the dental treatment plan is complete. Those records are then entered into the main electronic dental record. Keeping paper charts is a fail-safe strategy to allow for care in the event of a troublesome Internet connection.

Because the need for dental services in the numerous school communities is great, the program is able to visit each school only once a year. Jordan Valley would prefer to make return visits on a periodic or 6-month basis, but demand is high, limiting capacity to return. All children have an initial visit for screening and treatment planning. They return for a subsequent visit to receive treatment services.

The mobile unit staff or the school nurse will text or call the parent when it is determined that a dental treatment service is needed. In addition, a written report is sent to every parent describing the findings from the screening and any treatment recommendations. The original permission slip that is executed by the parent before the child is seen on the van states that the parent is consenting not only to screening services but also to treatment services if so needed. However, when extensive reparative services are required, the dental providers personally call the parents to discuss the anticipated treatment plan before the child's subsequent visit.

Jordan Valley staff provide services on the dental vans 4 days each week, often for 10 hours a day. Staff remain after school to address urgent or emergent needs in the larger community. Children attending schools where the van does not provide services may be brought to the van location for treatment after school dismissal.

Some of the children seen annually in the mobile dental program return each year with progressively worse decay. This happens despite the efforts of van staff to advise parents of the importance of having

their child establish a dental home in the community. Some services are simply too extensive to be supplied on the vans, so children are referred to the closest Jordan Valley dental clinic. When oral surgery services are required, the child is referred to the main health center.

One district visited by the van is the Logan-Rogersville consolidated school district, which consists of 5 schools at the elementary (primary, elementary, and upper elementary),



middle, and high school levels. The district includes children from 3 counties (Green, Webster, and Christian). The 5 school buildings are located from 3 to 5 miles apart. The Jordan Valley dental vans serve children in kindergarten through twelfth grade.

In its arrangement with Jordan Valley, the district agreed to equip schools with the appropriate wiring to support the electrical needs of the mobile dental vans. An electrical company, Webster Electric, donated electrical services, including outlets, at 3 of the schools, enabling the mobile van to conveniently locate and connect on school property. The vans have generators that can be used for auxiliary power as needed, but the plug-ins provide convenience and ease of setup. The van is driven to the property by the Jordan Valley facilities team; it remains in place as long as needed to address the dental care needs of the students.

Permissions for oral health services are sent home to all district parents. Parents must opt out if they prefer that their children not be screened or treated. As a result, two-thirds of the 2,400 children in the consolidated school district receive a dental screening service each year. Many ultimately receive needed restorative treatments. The van schedule is usually compiled at the beginning of the school year with input from the school nurse, who manages the permission slips and scheduling for individual students. Jordan Valley attempts to visit each school around the same time each academic year.

The dental team typically meets at the headquarters of Jordan Valley in Springfield and drives to wherever a dental van is parked. In Rogersville, the van moves among the 3 schools with electrical hook-ups. The district nurse actually transports children from the schools without hook-ups to the school where the van is parked so that students in need of treatment services from these schools may also be served. The process is finely tuned. While children enrolled in the school where the van is located are in treatment, the nurse travels to a neighboring school to transport students from there to the service location. There is a waiting area on each of the vans to increase efficiency. When one child is finished, another is immediately available to begin treatment.

Most children treated through the van program are insured by Medicaid. Program administrators maintain a list of uninsured children in need of care, and the dentists treat as many as possible without charge. A child with an urgent dental need receives priority regardless of insurance status. The vans generally remain in place until all services have been provided; the van will return to the district if all need is not met during the originally scheduled time period for the services.

Jordan Valley also manages a sealant program in the district, which is handled separately from the mobile program. The sealant program is supported by a state grant and targets approximately 600 fourth-, fifth-, and sixth-graders. Dental assistants affiliated with the program provide individual patient education, and each child receives a “goody bag” containing a toothbrush and toothpaste.

In another school district in Lebanon County, the need for dental services among schoolchildren was so great that the van remained in the district for 7 weeks. The program treated 333 children. Jordan Valley had a small fixed dental clinic (1000 square feet) in the local area with only one dental operatory. As a result of this noticeable need, Jordan Valley undertook an expansion of its local health center, which now occupies 27,000 square feet. The renovated health center includes both a primary care clinic and a dental clinic with 8 dental operatories. This project was partly funded with an expansion grant from HRSA.

Jordan Valley is seeking ways to use the mobile dental vans when schools are not in session. One possibility under consideration is to locate at Head Start programs during the summer months. The vans were recently used in community outreach efforts in the Rockaway Beach area, where the population is underserved. The health center partnered with a local church, which announced to the congregation that health and oral health services would be available on specific days in the van.

One van, which is used for both medical and dental services, was parked at a former school in Rockaway Beach. The strategy was to first offer primary medical services and then offer dental care. The local population is transient, and a portion is homeless, including families housed in local hotels or motels awaiting permanent housing. There was a disappointing response to the van outreach program. Several people who had scheduled appointments for primary medical or dental services did not arrive, leaving professional capacity unused.

Dental staff decided instead to go door-to-door to explain what they were doing in the neighborhood. Eventually, 18 patients received a dental treatment service; some also needed follow-up care at the health center. Many did not even realize that their eligibility for Medicaid provided them with a dental benefit. Others did not qualify for Medicaid but were provided with services regardless. The ED diversion voucher program provided funds for these free services.

The mobile health and dental units are considered the “flagships” of the FQHC because they not only offer medical and dental services but also provide outreach to surrounding communities with underserved populations that lack access to various health and oral health services. Some patients who receive services in the vans establish medical or dental homes or a comprehensive health home in the brick-and-mortar clinics of the FQHC scattered throughout the 7-county region. The mobile dental and health vans were viewed as extending the health home into the community.

Oral Health Workforce

Jordan Valley employs 12 full-time dentists, 4 part-time dentists, 1 full-time pediatric dentist, 4 part-time pediatric dentists, 2 contracted oral surgeons, and 7 full-time dental hygienists. The main health center currently hosts 8 pediatric dentistry residents (4 first-year and 4 second-year) and 4 advanced education

in general dentistry residents through its partnership with the New York University Langone Lutheran Residency Program. They also employ 63 full-time dental assistants, 44 of whom work in the main health center and 19 of whom work in satellite health centers. The dental assistants employed by Jordan Valley each rotate on the mobile dental units, approximately 2 days at a time. The health center is in the process of hiring 3 more dentists. One of the dentists who works full time on the mobile van was beginning a pediatric dental residency; at the time of this case study, the health center was in the process of hiring a replacement.

These dentists work in the mobile vans, at the affiliated dental clinics, and at other sites, including a correctional facility. The health center also provides dental student externship rotations for dental students from the University of Missouri–Kansas City School of Dentistry. Jordan Valley recruits from the residents who complete rotations at the health center and from the dental students who rotate in the clinics. Many of the newer dentists at Jordan Valley are working on federal loan repayment programs. Dentists often remain at the health center after their loan obligation is complete.

Jordan Valley recently hired 2 additional dental hygienists, bringing the total to 7, as increased demand for preventive services had resulted in a waiting list for dental hygiene services. One of the local colleges trains dental hygienists, so there was a pool of available workers. Dental hygienists with required training and competency testing are allowed to provide nitrous oxide anesthesia services. The health center provides the required training to meet board standards.

The health center trains dental assistants for their dental clinics in-house. Dental assistants are paid during training, though on a lower scale than already-qualified personnel. Each spends time in class and time in the clinic every day. The trainees take the Missouri basic skills test; to date, all of the center's trainees have passed. These dental assistants agree to work for the health center for 2 years in exchange for the training program. When training is complete, the dental assistant is paid at the starting rate for a qualified dental assistant.

Recruitment for trainees occurs through the health center's website. The first class included 6 students from an applicant pool of 15. The recruiting process was revised from its initial form to now require that applicants shadow a dental assistant at the health center for at least 8 hours before they begin training. This provides the applicant with a realistic view of what the job entails. In the most recent recruiting cycle, there were 30 applicants for the program.

Many of the applicants were in need of an opportunity to learn new skills, and the jobs were attractive because they provide full benefits. The health center has found it productive to train the dental assistants in-house because they learn center processes and routines and can be effectively utilized immediately at

completion of the program. Some of the new recruits have been patients from the health center; others are from diverse local communities.

Dental assistants have the opportunity in Missouri to qualify by training and competency testing for several expanded-function certifications, including orthodontics and restorative services. A restorative I certification permits the dental assistant to place and carve composite and amalgam restorations, while a restorative II permit allows the dental assistant to actually finish the restoration. Several of the dental assistants employed by Jordan Valley are qualified at level I but none have yet achieved level II certification.

Northeast Mobile Dental Services

Derry, New Hampshire

Introduction

Northeast Mobile Dental Services is a for-profit dental services organization that contracts with facilities to provide oral health services to nursing home residents in 3 states: New York, Vermont, and New Hampshire. The organization was originally formed 30 years ago in upstate New York to serve the residents of 3 nursing homes. Affiliated dentists and dental hygienists are now providing oral health services to residents of 75 skilled nursing facilities across the 3-state catchment area. In many of these facilities, Northeast Mobile Dental Services is designated as the dental director for the facility and, thus, receives a retainer for services.

Northeast Mobile Dental Services employs 12 dentists, including the dentist owner and 3 dental hygienists, one in each state. Many of the dentists attended dental school together at Georgetown Dental School and have a similar philosophy about oral health care across the life span, especially for geriatric patients. The organization employs a limited number of dental hygienists due to the various regulations and reimbursement methodologies in the states in which it operates. Employment of dental hygienists to provide direct services in nursing facility settings has been challenging in some places.

One of the dental hygienists employed by Northeast Mobile Dental Services is a certified public health dental hygienist in New Hampshire. This permits her to work under public health supervision in long-term care facilities in the state. Another provides services to nursing home residents in Vermont, where dental hygienists are permitted to provide preventive oral health services in public health settings under a general supervision agreement with a dentist.

Most of the dentists working with Northeast Mobile Dental Services are older dentists who also have private dental practices. Each commits at least some time each week to working in contracted nursing homes in their respective states. The case study for this project was conducted at one of Northeast Mobile Dental Service's contracted nursing home facilities in New Hampshire.



The Edgewood Centre is a family-owned (private), 112-bed skilled nursing facility in Portsmouth. At one time, the facility had 150 certified beds, but demand for skilled nursing has diminished with the growth in transitional facilities that provide supportive services to the elderly, including independent and assisted living communities.

About 100 of the beds at the Edgewood Centre are certified for long-term services, and 12 are rehabilitation beds. Approximately 40% of the residents in the facility are privately insured; 50% are covered by Medicaid, while the remaining 10% are Medicare-insured patients mainly occupying rehabilitation beds. Edgewood also has a few younger residents who qualify by disability for skilled nursing care. At one time, the nursing home had a pediatric wing for medically complex children who needed extensive nursing services. Some of these early residents are now adults who continue to live in the facility.

Mobile Dental Services for Residents of the Edgewood Centre

Senior administration at the Edgewood Centre is committed to providing comprehensive health services to the home's residents, including routine oral health care. While the Medicaid program in the state of New Hampshire offers coverage to beneficiaries only for emergency dental services, the directors of the nursing home recognize the importance of providing routine oral health services for the overall systemic health of the facility's residents. The Edgewood Centre and Northeast Mobile Dental Services have a contract that stipulates capitated payment for dental services on a per-patient basis. As a result, a dentist and a dental hygienist rotate coverage in the facility on an every-other-week basis and provide routine preventive, treatment, and emergent dental services for residents.

Northeast Mobile Dental providers do not always use portable dental chairs. Some nursing facilities have fixed dental chairs, while others do not. Many dental services are provided while patients are in bed or in their wheelchairs. Dentists and dental hygienists bring any necessary equipment to the patient's room. In some nursing facilities, the attending dentist cleans patients' teeth; in others, a dental hygienist performs that service. Prophylaxis may involve a full scaling or may be a toothbrush prophylaxis that includes fluoride application and a mild mouthwash such as Biotene. Scalers are used only when and where appropriate.

When the organization first began providing services in nursing homes, the population was less medically compromised, so providers were able to offer a variety of services such as restorations, extractions, and denture fabrication. In recent years, as the medical complexity of residents has increased, services have shifted to an emphasis on therapeutic care, including application of silver diamine fluoride and interim therapeutic restorations that are placed with less discomfort to the patient. While all services

are still available, the predominant services are now preventive, palliative, and medical and pharmaceutical interventions.

Dental providers maintain patient dental records by incorporating their progress notes and care plans into the electronic medical record used by each nursing home. These notes also interface with the minimum data set information for each patient. In cases where billing either commercial insurances or Medicaid for patient services is appropriate, the dentists assume responsibility for that activity.

An extensive discussion with case study informants revealed that necessary dental care for elders living in nursing homes was thought to be fundamentally different from that typically provided by a dentist in a private dental practice to healthy elders dwelling in the community. Regulations of the Centers for Medicare and Medicaid Services governing residential care for the elderly require only that a new resident in a skilled nursing facility receive an oral health assessment at intake and that the nursing facility enable any subsequently necessary dental services for residents in care. Informants noted that this requirement often results in elders receiving services only for emergent or acute dental problems, especially since funding to cover the costs of dental services is either inadequate or not available to many nursing home residents.

However, leadership at the Edgewood Centre recognizes that oral health is a fundamental contributor to the overall well-being of the residents of their nursing facility. This philosophy has led to engagement with dental service providers for many years and to encouraging an environment that supports the importance of oral health. Leadership works to ensure that nursing home staff are properly educated to help residents with oral hygiene and has contracted with dental providers to ensure that all residents routinely receive preventive oral health services and have access to treatment services as problems arise.

Clinical providers from Northeast Mobile Dental Services who participated in this case study indicated that the population of elders living in nursing homes today differs considerably from that of the past. The advent of transitional housing arrangements that allow a senior to move from independent to assisted living, then to assisted living with supports, and finally to a skilled nursing facility have changed the complexion of the population of patients who receive skilled nursing services. Many assisted living facilities now even offer end-of-life care for residents who can be appropriately managed in that setting. Nursing homes are no longer “rest homes”; they are places where only the very medically complex and frail receive care.

As a consequence, most residents of skilled nursing facilities have multiple medical comorbidities and high rates of dementia or cognitive impairment that affect all functional areas. Their ability to participate in or cooperate with medical or oral health services is often highly compromised. In addition, because

many of these elders arrive in the nursing home with significant pre-existing debilitation that has occurred over time, their mouths are sometimes also severely debilitated at admission.

As dementias develop and progress, patients become increasingly resistant to routine oral hygiene, especially to anyone putting something (a toothbrush, medication, etc) in their mouths. Although many more patients than in the past are admitted to nursing homes with full or mostly full dentition due to better oral health care earlier in their lives, many are also medically fragile and in poor health, which complicates ongoing management. As dementias develop and progress, the relative importance of oral health to caretakers and even providers diminishes. Thus, by the time a dentist intervenes, oral disease has significantly progressed and tooth structures are endangered.

Often, dental providers can consider only palliative or comfort services for these complex patients. Cosmetic procedures such as crowns require extensive interventions that are generally not appropriate. In addition, many of these patients have significant difficulty tolerating activity in their mouths for the length of time required to complete a treatment procedure.

Because teeth and nerves calcify, decay may not be painful; it is not unusual to place a filling in the tooth of an elderly person without using local anesthesia. The use of silver diamine fluoride was discussed as a satisfactory intervention for many elderly patients. While tooth color is affected by the compound, placing it on a tooth prevents further decay and also positively benefits surrounding teeth. The compound changes the mouth flora, reduces the risk of further decay, and inhibits the spread of caries to proximate teeth. Xylitol is another material that is often used, as are glass ionomer cements.

One case study informant spoke of the challenges of working with patients with dementia. In his opinion, a dental provider might expect patient compliance with a procedure to last, on average, only 6 or 7 minutes, limiting treatment options to those that can be initiated and completed during acquiescence. He spoke of one patient with dementia who was confined to a wheelchair and was known to be combative. Her caregivers had noticed significant halitosis and had called for a dental consultation. Upon gentle examination, he noted that all anterior teeth had denuded and the gums were bleeding. He was able to coax the patient to allow him to brush her teeth, which she seemed to find comforting. She now allows him to repeat this every week, which has stopped the bleeding and helped to arrest the disease process.

Informants acknowledged the ease with which daily caregivers become discouraged with tooth brushing for noncompliant patients. Given that nursing facilities are often understaffed, it is difficult for overworked caregivers to spend an inordinate amount of time on a task that is not as highly valued as other patient services. Case study participants considered it important to educate staff to appreciate that the effort was, in fact, essential for the patient's health. Staff must also be equipped with the tools and

strategies to be successful. For instance, a patient with dementia will often feel threatened if someone moves toward the mouth from the front. Compliance with tooth brushing is greater if the patient is approached from the side while in a comfortable place like a bed or wheelchair.

Informants also discussed the importance of helping residents of nursing homes to maintain their highest level of functionality and as much independence as possible. Good oral health contributes to nutritional status and to the ability to communicate, all of which affect systemic health and functional status. Clinical professionals, especially medical providers, are not always well equipped to address oral disease, which complicates outcomes for many nursing home residents and leads to further deterioration when developing conditions are ignored. Oral conditions in the elderly are linked to the occurrence of aspiration pneumonia from dental plaque that breaks from the teeth and to increased risk for coronary disease, diabetes, and stroke.

Clinicians acknowledge that patient fragility affects decisions about treatment plans because of difficulties related to medical and mental status. The oral health providers who participated in the interviews for this case study discussed the special importance of an integrated, team-based approach to comprehensive care for their patients. It was routine practice for these oral health providers to interact with nurses and physicians in the facility to discuss the noticeable impacts of medication changes on the oral cavity or on the management of disease.

One of the dentists who participated in the interviews discussed how he had been called to a facility on an emergent basis to care for a patient who had developed bleeding gums. When he examined the medical record, he noted a change in medication that he believed to be responsible for the spontaneous bleeding. He conveyed his concern to the medical director, who then discontinued the medication, after which the bleeding stopped. Drug site reactions may also cause mouth ulcers in the roof of the mouth or in the mucosa. Many common medications used in the elderly—including aspirin, Plavix, and newer medications such as Xarelto and Pradaxa—can have side effects that affect the condition of the mouth. Synthroid (used for thyroid conditions) and oral steroids also may introduce complications that negatively impact the oral cavity.

The dental hygienist who worked at the Edgewood Centre was an active member of the health care team in the facility. She knew many of the direct care staff and had gained their trust. She described ongoing interchange with many caregivers regarding their mutual patients' oral health. Informants indicated that one of the biggest challenges to instilling a culture of good oral health was appropriate education of the staff about its importance.

This was cited as especially difficult because direct care staff in nursing homes change often; turnover rates are high in these facilities because the work is physically demanding and often low paying. The

dentist working at the facility spent time educating nursing and nursing assistant staff on how to assess patients' oral health status and how to effect routine oral hygiene. The dentist conducted individual educational sessions with each direct caregiver between June 2016 and February 2017, by which time at least 25 new employees required training due to staff turnover.

Ultimately, case study informants spoke of the culture of oral health that was built at the Edgewood Centre over time, attributing much of that to the owners of the facility and their commitment to the health of the residents. Patients and staff were accustomed to the presence of the dentist and dental hygienist and had integrated oral hygiene into daily routines. The dental hygienist rotated through the nursing home every other week and was able to see each patient at least every 3 to 4 months. Leadership in the facility commented that it would be ideal if there were resources to employ a dental hygienist full time.

St. David's Foundation

Austin, Texas

Introduction

The unique operational model of St. David's Foundation in Austin, Texas, differs from that of many private nonprofit foundations. The foundation not only provides grant funding for programs in the local community but also acts as a direct service provider through its mobile dental van program. Addressing unmet need for oral health services in the Austin community has been a priority of the foundation since its founding in 1996.

In addition to its singularity as a direct service provider, the foundation is also part of a unique joint partnership with St. David's HealthCare (part of the Hospital Corporation of America system). Proceeds from the joint partnership are reinvested in the community through St. David's Foundation's grantmaking and direct service programs, including the Mobile Dental Program.

This unique funding model will result in an impact of over \$75 million in grants to organizations and programs in a 5-county region in the environs of Austin in 2017 alone. These grant investments are significant to many of the local organizations that serve those with limited access to healthcare due to socioeconomic or geographic barriers. Austin has a very diverse population and is one of the fastest growing cities in the US.

The foundation is also home to an Innovation Center and a capacity building program, CapacityWorks, which seeks to increase organizational capacity of grantees and other community stakeholders. While the St. David's Foundation is a regional foundation with a relatively small geographic footprint, it has resources equivalent to many national foundations. These resources enable transformational work and health care delivery innovation in the Austin area. The foundation continues to grow and to demonstrate sustained impact in improving the oral health and overall health of the 5-county area it serves in Central Texas.



Mobile Dental Program Overview

The foundation sponsors a fleet of 9 mobile dental vans, each equipped with 2 dental operatories. The mobile program offers dental screenings and diagnostic, preventive, and treatment services (including fillings and extractions) for children in 96 Title I elementary schools in 6 districts (Austin, Del Valle, Hays, Manor, Pflugerville, and Round Rock) in Central Texas. All services are provided free of charge. In the 2016 -2017 school year, the mobile dental program served more than 11,000 children during 15,000 dental visits at 65 participating schools. The program focuses mainly on children in the K-5th grades, although any child in need of emergency dental treatment services can access care through the program.

Treatment Focus

The mobile dental program was originally designed with a predominately preventive focus (primarily school-based sealants delivered through portable equipment). However, it quickly became apparent to clinical staff that the need for restorative services among the children in target schools was significant, so the program evolved to a mobile dental van model. In the early years, many of the dental services provided on the vans addressed the treatment of caries (97% of services were restorative in 2000). Due to repeated visits and patient management, the program is now able to dedicate a majority of the clinical time on the vans to preventive services (69% of services in 2016).

The program is multi-focused. The first goal is service oriented – dental screenings, preventive care, and treatment of existing disease. The second component focuses on navigating the segment of the population with significant unmet need for dental care to appropriate providers in the community.

Additionally, the foundation coordinates and funds a complex care program to enable referrals for children with dental treatment needs beyond the scope of the mobile dental program. The third component of the dental initiative is education and outreach to increase oral health literacy in the local community.

Complex Care Case Management

St. David's Foundation has 40 community-partner pediatric dentists and specialists who have agreed to treat complex care children referred from the mobile dental program. In the early years, services were provided free of charge by these dentists but as the reach of the program has expanded and demand has increased, that has changed. The foundation now subsidizes complex dental care provided by these dentists at 50% of the cost of services. About 250 of the 11,000 children treated annually in the vans require complex care services that are more extensive than can be provided in a mobile van. A case manager employed by the foundation accompanies all children to complex care appointments and provides the child and parent with transportation as needed. Participating dental specialists include pediatric dentists, orthodontists, endodontists, and oral surgeons.

St. David's Foundation Grantmaking in Oral Health

In addition to the direct-service dental program, the foundation provides grants for organizations to support oral health and provide dental services to patients in Central Texas. These providers include the Manos de Cristo Dental Center, CommuniCare, Central South Texas Community Health Center, the Health Alliance for Austin Musicians, Lone Star Circle of Care Dental Clinic and AIDS Services of Austin-Jack Sansing Dental Clinic. Further, Healthy Smiles Central Texas is a 3-year, \$10 million initiative led by the foundation that aims to increase access to affordable dental services for thousands of low-income, uninsured adults in Central Texas. Comprised of 11 grants, the intended outcomes include improving clinic efficiency and capacity building to sustain the overall organizational health of participating grantees.

Mobile Dental Program History

The history of the dental van program is of considerable interest. It began with a partnership among diverse community stakeholders. In the 1990s, the city of Austin operated a mobile dental van to meet the oral health care needs of the homeless population, but the van was utilized only part of the time. In 1999, St. David's Foundation joined with the city of Austin and the Capital Area Dental Society to improve access to dental services for school children using the city's van for a sealant program. The foundation eventually assumed exclusive operation of the dental van and dental services expanded considerably. By 2002, the mobile program had acquired a second dental van and the program was managed solely by the foundation.



After thoughtful consideration of the benefits of providing dental services in a portable format, the foundation began investing in earnest in the dental program in 2006. While the expense of operating and maintaining mobile dental vans was somewhat burdensome, the advantages to vulnerable populations were irrefutable. Mobile services mediate the transportation barriers that

prevent people from accessing dental services by reducing the time away from work or school. A main objectives of the program is and continues to be treating vulnerable children and linking them to a dental home in their local community.

During the most recent decade, the dental program experienced 3 major “growth spurts.” The first occurred in 2006 when the program grew to 5 dental vans with the addition of 3 new coaches. Another occurred in 2009 when 2 new vans were aquired and the original “city” van was replaced. The last occurred in 2014 when 2 new vans were added to the fleet and the oldest van in operation was refurbished.

At the time of this case study, St. David’s was anticipating delivery of 3 new vans in the fall of 2017, to replace 3 older vans. The foundation expects to retire a van that was built in 2002 when the newest vans are delivered, and will donate the remaining two vans to an eligible non-profit dental clinic. The new vans will sustain existing capacity for oral health service delivery in the foundation’s program with 9 mobile dental vans.

Logistics and Equipment

A customized and fully equipped mobile dental van costs approximately \$485,000 and has an anticipated life span of 12 to 15 years. In the beginning, the vans were recreational vehicles repurposed with dental operatories. These were hooked to trucks for transport to the location of services. Over time, the foundation’s clinical providers and administrative staff refined every design detail to better tailor space functionality and flow to service delivery. The 3 newest vans were built in Jasper, Texas using 40-foot shells of Lonestar self-contained motor coaches. Every detail from the frame to the electrical outlets is purposeful.

Five of the dental vans are equipped with wheelchair lifts and all vans have internal on-board generators. To maximize efficiency and reliability of the vans, the program also purchased four external generators that can be shifted to any van as needed. The external generators are expensive but use less fuel, are less noisy and produce less vibration than the on-board generators. Each van has a custom-built sturdy staircase at the entry door. Booster seats are available to enable care for small children.

Mobile Dental Program Operations

Eight of the vans are in the field every weekday. There are four regional teams and each team has 2 vans. The 9th van acts as a spare during maintenance or to substitute as unexpected problems arise. The vans remain on the school properties for an average of 2 to 3 weeks.

A fleet team is based at the foundation's headquarters in Austin. The team is responsible for van logistics, including transporting, maintaining, and servicing of the vehicles and stocking of supplies. The fleet manager scouts each school prior to its scheduled arrival to select a level spot to park the 2 vans. A full-time driver moves each van to its intended destination and completes set-up the evening before services are scheduled. Each van's generator is equipped with a timer that automatically starts the vans one hour before and shuts it down one hour after scheduled services. The vans carry water supplies in saddle tanks mounted on the sides of the vehicle, each of which contains 40 gallons of clean water. The foundation contracts with a wastewater company to empty the grey water on the vans every week. The fleet team ensures that the clean water tanks and the fuel tank on every van remain full. Again, these activities occur after clinical hours.



A designated “Van Owner” dental assistant on each van is responsible for clinical van maintenance. Van owners also order supplies for subsequent delivery by the fleet’s logistical team during off clinical hours. After experiencing occasional vandalism, each van was retrofitted with a security system including 4 external cameras and an internal camera for 24-hour surveillance. All vans are padlocked when not in use and school security teams watch over them.

Each of the vans is named for the program mascot, a bear named Theo, and has a number to indicate its succession relative to the others. Theo 9 is one of the newer vans while Theo 5 has been in service longer. While the vans carry similar names, each interior is decorated differently based on a specific theme selected by van staff. One van has a fish motif while others are decorated with spaceships or ladybugs. All are designed to be attractive and comforting environments for children.

The mobile dental program provides services in schools in a 45-mile catchment area which configures in a crescent shape from south to north of Austin, and encompasses Travis, Williamson, and Hays counties.

Dental Services in Schools

The foundation executes a Data Sharing Agreement (DSA) and a Memorandum of Understanding (MOU) with each of the school districts that describes roles and responsibilities. One requirement is that patients and program staff have access to school bathrooms. While the program has MOUs with 6 school districts, it is not possible even with the foundation’s extensive resources to visit every one of the 96 schools every year because the need in each is extensive.

Twenty of the schools in the highest needs communities are scheduled every year while the remainder are visited in rotation either every year or every other year.

Four weeks before the mobile dental program is scheduled to arrive at a school, the school nurse or other staff send permission slips home with the children. The slip, which is published in both English and Spanish, provides information about the program and explains that mobile dental staff will conduct dental screenings to assess treatment needs. This slip is an “opt-out” form so only those parents who do not wish to have their child screened are required to return the form.

St. David's Foundation **St. David's Dental Program**
Free dental care for Central Texas school children.

St. David's Dental Program provides **FREE** dental care to Central Texas school children. Our services are 100% free and do **NOT** affect your child's eligibility for Medicaid or other insurance programs. Our Board Certified dentists give high quality care on our mobile dental clinics, which travel to local schools. The clinics treat the children at school, so they don't have to miss class.

Services we provide:

- X-rays
- Sealants
- Extractions
- Fillings
- Emergency Care
- Cleanings

Check **NO** and return this form **ONLY** if you do **NOT** want your child to receive a **FREE** dental screening by a Board Certified dentist.

What is a dental screening? A licensed dentist will give your child a quick exam with no x-rays to determine if treatment is needed. The dentist will give your child a permission form for you to sign if he/she needs treatment.

☐ **No, I DO NOT want my child to have a FREE dental screening**

Parent's signature: _____
Child's name and grade: _____
Teacher's name: _____
Date: _____

For information on when the St. David's Dental Program will visit your child's school, please call (512) 879-8231
www.stdavidfoundation.org/dentalprogram

About 3 weeks before the vans are due to arrive, a dentist and two screening dental assistants go to the school during school hours to perform dental screenings. The screening team assesses as many as 500 children in 2 or 3 screening days. The dental screening allows the dentist to determine whether a child needs preventive, restorative, both or no dental services before the van arrives on the school campus. Program staff screen about 30,000 children each academic year, about a third of whom eventually receive a service.

Population Health Impact

Approximately 77% of children in participating schools (grades K-5th) receive a dental screening each academic year. In 2016-2017, 28,631 children were screened in 68 elementary schools. As a result, 11,331 children received a preventive and/or treatment service at an average cost of \$887 per patient. This equated to \$12.1 million in free dental services for children in the greater Austin community.

The focus of the dental program is on treating permanent teeth so sealants and restorative care are considered an essential priority service. The site assistant, on each regional team manages the patient flow. The assistant generally begins by selecting students from the 5th grade since these children are the most likely to have permanent teeth in need of dental care. During the several weeks that the vans are at the school, the site assistant works backwards to the lower grades as services for students in the upper grades are completed. For example, in one 2-week period at an area school, the clinical staff on the vans completed 205 restorations and placed 67 sealants on permanent molars in addition to other preventive services.

The scope of services provided on the mobile dental program is limited to preventive and basic restorative services. This includes exams, x-rays, fillings, sealants, extractions, cleanings, and fluoride applications. There is no dental sedation for children on the vans. The program operates from 7:30 AM-4:00 PM. The vans park at elementary schools within each school district and provide services to children at these schools during school hours (generally 8:00 AM to 2:30 PM). The program also reserves a daily afterschool emergency appointment slot for school children at 2:30 PM. These slots are reserved by appointment or for emergency care for children in other schools in the district.

However, there is about a 20% no show rate for families who make after school



appointments. Parents are required to be present for any urgent services for their children. Clinical staff on the vans have developed considerable expertise in working with children and providing age appropriate oral hygiene education. They manage dental anxiety and successfully address most behavior issues. When services are finished, children are given goody bags with tooth brushing supplies, a timer for brushing and flossing, educational materials and small toys.

Although the foundation does not bill insurance for the services provided through the mobile dental program, dental operations staff track the insurance type of children who receive services. In 2013-2014, 46% of the children were insured by Medicaid; 14% were insured by CHIP; 24% were uninsured; and the remainder were covered by other types of insurance. Most children served on the vans (72%) were Hispanic/Latino; 11% were African American; 11% were other or multiple race; and 6% were White.

Technology on the Vans

Each van is equipped with a Panorex to image a child's oral cavity and intraoral units for individual images. With the addition of new vans, the foundation will be investing in Maxray handheld portable x-ray machines for each van team. A registered dental assistant in the dental operations staff schedules after school appointments and team meetings. The assistant provides important flexibility because she can manage logistics or float to provide clinical services as needed. Staff use a custom-built software management system (St. David's Foundation Dental Management Tool) to identify the children with the most urgent treatment needs during the dental screenings at the school. They can thus, appropriately prioritize care and determine which children should be escorted from their classrooms to the van. The site assistant coordinates the day with the school nurse and clinical team.

The open-source software program Open Dental is used as the universal electronic dental record, and was selected because of its nimbleness for customization. Open Dental includes a central enterprise management tool that allows data from one van to be accessed at headquarters or in other vans also networked to the system. Due to the erratic nature of the Internet in some of the more rural locations served by the mobile dental program, patient data is sometimes compiled on paper at the point of service and later added to the electronic patient record at foundation headquarters.



Workforce

Since 2010, the workforce on the mobile dental vans have been organized as structured regional teams. The program employs approximately 11 dentists, 5 dental hygienists, 19 dental assistants, and 16 operations staff. Each clinical team usually consists of a lead dentist, a staff dentist, a dental hygienist, and 4 dental assistants, one of whom acts as the site assistant. Each clinical team staffs the 2 mobile vans at a single school location. Dental operations staff are responsible for dental screening logistics, staff/patient scheduling, fleet maintenance, data analytics, school outreach; this staff is located at the dental program administration office in the foundation's headquarter location.

The 4 regional clinical teams are designated as the Purple Team (north region), the Red Team (north and east regions), the Blue Team (south and central regions) and Orange team (south region). Each team member drives to the scheduled school location daily. The foundation assists with mileage reimbursement for all staff. Most of the dental assistants live south of Austin although they are scattered throughout the mobile dental program service areas. Ninety percent of the staff is bilingual. The areas surrounding Austin have a large Hispanic population as well as a growing Asian population so language and cultural competency is key.

A decade ago, the foundation was experiencing a 33% turnover rate among dental staff. The turnover rate is currently about 3% annually. As the community has grown in their knowledge of the program and its contributions, so has the reputation of the foundation as one of the region's "best places to work."

The jobs provide excellent benefits including fully subsidized health insurance for employees and their spouses/children, and tuition reimbursement. The foundation recognizes the importance of investing in staff development and providing career pathways for employees. Every 5 years, each staff member has a 2-week paid sabbatical in addition to vacation to reflect and recharge.



St. David's Foundation and Grantee, the People's Community Clinic

For many years, St. David's Foundation has invested in helping safety net health clinics throughout Austin build capacity and expand reach to local populations by growing infrastructure and programming. Over time, the foundation has invested millions in primary care clinics in the metropolitan area. During the summer months when schools are not in session, the mobile dental program parks in the parking lots of several of these safety net clinics that do not have current capacity to provide their patients with dental services. The mobile dental program operates Monday through Friday from 7:30 AM to 4:00 PM and provides basic preventive and restorative services for patients from each of the safety net health clinics during the summer months and school holidays. All summer appointments for the mobile dental program are scheduled. The clinical providers complete approximately 110 appointments weekly.

One of these organizations, People's Community Clinic—an FQHC in Austin—has demonstrated significant need for dental services in its catchment area. Project staff visited the FQHC during conduct of this case study. Leadership and staff of the FQHC have a long-standing partnership with St. David's Foundation and a common goal of improving access to health services for local residents.

Recently, the foundation provided a \$10 million grant to enable People's to refurbish 35,000 square feet of warehouse space to enhance its capacity to provide primary health and behavioral health services for patients. The newly renovated safety net clinic is already at capacity because of significant demand from the local community for these health services. Consequently, there is no physical space to house a dental clinic to provide oral health services, which are also in high demand.

Additionally, St. David's Foundation awarded People's Community Clinic a 3-year grant to establish a fixed dental clinic to increase capacity to provide adult dental services. The first-year grant funding from the foundation for the planning, design, and renovation process was \$2.4 million. The dental clinic is expected to include between 6 and 10 operatories. In the year subsequent to construction, the grant will subsidize first year operational expenses but eventually the dental clinic will be financially self-sustaining. This is an especially difficult goal in Texas because the state Medicaid program does not provide an adult dental benefit. Thus, most services for adult patients will be supplied on a sliding fee scale keyed to income. At the time of the case study



interviews, the FQHC was searching for nearby space to renovate as a full service dental clinic.

The FQHC is hoping to establish the dental clinic near its existing safety net clinic and its women's health clinic. Locating the dental clinic in a nearby building would enable service integration, making it easier to accomplish linkages across disciplines. The FQHC is located near a community college that has a dental hygiene education program and a trade school training allied health workers. These will likely provide a convenient pipeline for auxiliary dental workforce once the dental clinic is operational.

People's Community Clinic was described as a "tiered cake" because it has gradually built upon its original more limited mission to become a full-service community clinic. Originally called People's Free Clinic, it was founded as a goodwill clinic 47 years ago in 1970 in a church basement near the University of Texas. Volunteer doctors and nurses primarily served college students and the working poor. The mission of the clinic was to provide care with dignity and respect, to be responsive to patient need, and to empower patients.

In the beginning, the clinic mainly provided primary care and family planning services. Patient education was central to the clinic's mission. Staff included social workers, health educators, nutritionists, and counselors.

Over time and as the population accessing services increased and diversified, People's Free Clinic became People's Community Clinic, providing services on a sliding-fee scale keyed to patient income. In 2012, it was designated an FQHC after meeting all program requirements in its initial application to the federal government. About 65% of current patients report incomes at or below the federal poverty level; 76% identify as Hispanic, 8% as Black, and about 3% as Asian. Ninety percent of the workforce in the health center's clinics are bilingual. The FQHC now provides primary health services in a pediatric clinic, an adolescent health clinic, and an adult primary care clinic, as well as behavioral health services and onsite laboratory and pharmacy services. In addition, People's Community Clinic sponsors a women's health clinic.

People's Community Clinic employs 244 clinical and administrative staff, including 32 clinical providers (a full-time equivalent of 24 clinicians). The FQHC serves 16,000 patients, 90% of whom reside in Travis County, in which Austin is located. The clinical staff comprises mainly physicians, with a few nurse practitioners. The FQHC employs 1.8 medical



assistants and 0.7 registered or licensed vocational nurses per primary care practitioner. People's employs 3 obstetricians to staff the Women's Health Center.

Transportation is an issue for many of the health center's patients so "no show" rates for scheduled appointments are relatively high. Although there is a bus stop nearby, the bus system in the metropolitan area is cumbersome. Therefore, most patients arrive at the health center by personal car or other transport. The FQHC has adopted several strategies to encourage compliance with scheduled appointments including providing patients with a transportation resource sheet.

During summer, 2 of the St. David's mobile dental vans park in the lot adjacent to the safety net clinic to provide dental services. Providers on the vans only treat patients who are primary care patients of the safety net clinic. The foundation requires that all dental patients have seen a provider in the primary care clinic within the prior 3 years. The primary care provider must complete a referral form and provide a medical and dental history of the patient. Patients with emergent dental needs, diabetes or other high-risk health conditions such as cardiac problems, comprise the majority of patients referred to the mobile dental program. Most dental services address emergent issues with many patients needing extractions. The dentists on the van provide basic restorations but patients in need of more extensive restorative services are referred to other private dentists involved in charity care initiatives or community clinics. Schedulers within the foundation's dental operations team also call to remind patients about appointments and inquire about their arrangements for transportation. Often, staff facilitate transportation assistance and directions, if patients have a transportation issue. Clinical staff have even helped patients change flat tires to enable arrival for a scheduled appointment.

St. David's mobile dental program provides similar services for adults at three other safety net clinics in the summer months. During the summer of 2016, dental providers treated 530 patients, mainly adults, during 1,200 encounters through the mobile dental program. The total value of these services, which are provided at no cost to patients, was approximately \$257,000. Approximately one quarter (24%) of the services were preventive; 27% were diagnostic and 49% were restorative.

Reassessing Need for Oral Health Services in Central Texas

The mobile dental program is constantly reviewing community needs assessments and its own patient data to prioritize the greatest needs for services. Community need is dynamic. In some places, many of the children are now routinely accessing dental care so demand for the program's services has decreased in certain schools. Each summer, program staff also review the ever-changing demographics in the catchment area to make decisions about where services will be provided in the coming academic year.

St. David's Foundation staff commented on the suburbanization of poverty in the region. Because of the rapid population growth in and around Austin, the foundation has found it necessary to reassess the schools it regularly serves to ensure that the most economically disadvantaged schools are prioritized for mobile dental program visits. The economic prosperity in Austin in recent years has had an adverse impact on vulnerable communities as neighborhoods continue to gentrify and housing becomes unaffordable. As a result, the catchment area where free services are needed is expanding further from Austin. However, identification of needy communities is complicated because economic prosperity touches communities differently; thus, some populations within relatively prosperous communities may still be underserved.

It appears that the need for dental services is increasing so dental leadership staff are revamping their service delivery plan to a bi-annual rather than annual basis so that more children in more schools might benefit from the program. The foundation will continue to emphasize the goal of navigating children to a dental home in their local community. Achievement of this goal would allow child patients to access a consistent continuum of care.

Mobile dental programs are ideal in dynamic urban and rural environments because they can easily adjust to the changing demographics and health needs within a population. The foundation's grantmaking combined with its direct service investment in the mobile dental program, allows for a place-based approach which strengthens the oral health system in Central Texas.



The foundation has chosen oral health as an important area to invest its philanthropic dollars and thought leadership both regionally and nationally. The foundation shares best practices and learns from philanthropic and healthcare peers through its leadership with the national Mobile Health Clinics Association, and the national Funders in Oral Health Policy Group. In collaboration with community partners and grantees, St. David's Foundation is doing its part to create the "healthiest community in the world."



Case Studies of Mobile and Portable Dentistry Programs

Case study interviews conducted by:
The Oral Health Workforce Research Center
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 (mlangelier@albany.edu)

Thank you for agreeing to participate in these case studies of mobile and portable dentistry programs in the US. Your program was selected for participation because of its innovative approach to oral health service delivery using a mobile van or portable dental equipment and the skills of an oral health team working in locations other than a dental office. This case study will include an onsite visit by 2 researchers to the sponsoring entity and/or at a location where mobile services are provided. Researchers will conduct individual or group interviews with as many staff in your organization as possible, including executive/administrative staff, clinical staff, and others from collaborating organizations (eg, a school or nursing home administrator). The interviews will be scheduled to accommodate clinical schedules and minimize interruptions to service delivery.

Case Study Protocol for the Study of Mobile and Portable Dentistry Programs

This case study is being conducted to inform a review of the use of mobile/portable oral health services delivery programs to improve access to oral health services for underserved populations. The research is conducted by a team of researchers at the national 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, US Health Resources and Services Administration (HRSA), under its cooperative agreement with the OHWRC. This interview is voluntary and, with consent of participants, will take approximately 30 minutes to 1 hour to complete. If this interview is conducted in a group, it will take approximately 2 hours to complete.

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 of key findings from the interviews will be compiled when all interviews are complete. The report will provide no information that could be specifically linked to you. Any personal information provided during the interview will remain confidential.

The report will include a section summarizing common themes drawn from all case studies for the project, followed by provider-specific briefs describing each of the mobile/portable dentistry programs participating in the case studies. Topics will include sponsorship and financing, clinical and administrative staffing, service delivery mode, characteristics of the collaboration, and outcomes measures, when available. You will have the opportunity to review the case study brief describing your program prior to final publication.

Do you have any questions or concerns about this interview before we begin to talk? Please tell us at any point if you wish to or must discontinue this interview.

Questions

The Program and Its Partner/Host Organization(s)

1. Please describe the sponsorship of this program. How was funding for equipment and, if applicable, a van obtained? Is the program for-profit or not-for-profit?
2. Are partner organizations involved in the program (eg, a school district, a nursing home provider)?
3. Describe the physical space allotted to the program by the cooperating entity. If this is a mobile van, describe how it is equipped.
4. Are there state regulations governing the operation of this mobile/portable dentistry program that are facilitators of or barriers to care delivery?

Questions for Partner Organization(s)

5. Describe the unmet need within the organization's population that precipitated participation with the mobile/portable oral health program.
6. Please discuss any facilitators or barriers to collaboration with the program.
7. How long has this collaboration been in place? Is engagement with the program on a contractual or informal basis? Is there a staff person acting as liaison to the oral health program?

8. Are there other community collaborators?
9. If permissions are required for patient participation in the program, how are these obtained and processed?
10. Are there any statutory or regulatory requirements that impact the collaboration (eg, state requirement that adults working with children in a school must pass a background check)?
11. Does this organization participate in any way in the billing/reimbursement process for the services?
12. Describe how service delivery is integrated into the schedule.
13. Describe the benefits of the program for constituents in the organization.
14. If this program is focused on children, has there been any feedback from parents about its benefits? If this is a program providing elder care, has there been any feedback from families?
15. Please discuss any feedback from the organization's staff or administration about the benefits or disadvantages of the program.

The Population Served by the Program

16. What is the target population for the program? What were the unmet needs of the population that suggested the necessity for a mobile/portable dentistry program?
17. Please summarize the dental insurance status of the patient population.
18. Do any special characteristics of this population affect the types of services that are delivered? Are there specific barriers that make delivery of services particularly challenging (eg, behavioral disorders, special health care needs, dementia, etc)?
19. Does the program have a specific focus (eg, preventive services only, treatment only, etc)? What oral health services are delivered through the program?
20. Is risk assessment using a formal protocol a provided service?
21. Are there formal referral processes in place for patients in need of further treatment services? Is patient referral problematic? Does the program have any system for following patients to determine if they receive recommended treatments?

22. Do patients receive periodic follow-up visits through the mobile/portable dentistry program? If so, how frequently?

The Workforce and Services Provided

23. What oral health personnel are directly or indirectly involved with the program? What staff in the collaborating organization are directly or indirectly involved?
24. Are there any scope-of-practice regulations, especially for dental hygienists, that impact the services delivered or alter the process for delivering services (eg, a state requirement for prior dental diagnosis and treatment planning or issues with reimbursement for services)?
25. Does the program use an electronic dental record?
26. Does the program provide any diagnostic imaging services? What equipment is used (eg, Nomad x-rays, Panorex, etc)? Are these images transmitted to other providers? If yes, please describe.
27. How are the services provided by the program funded (eg, through grant funding, Medicaid reimbursement, third-party billing, etc)?
28. Does the program collect any data to describe outcomes (eg, program participation rates, demographic characteristics of patients served, completion of dental treatment plans, etc)?
29. How are services provided in the mobile/portable dentistry program reported to the dental home when one exists? Do state regulations require registration and annual reporting by mobile/portable programs?
30. If the program provides any case management or follow-up services, what personnel provide these services?
31. Is there anything about this program that has not been addressed in this interview that you think is important to this discussion?

If you have any questions about this interview at any time, please contact Margaret Langelier at mlangelier@albany.edu or by phone at (518) 402-0250.

Appendix C

ANNOTATED BIBLIOGRAPHY

The following summaries describe peer-reviewed literature discussing the provision of mobile and portable dental services and their impacts on those served by these programs.

Roberts FA, DiMarco AC, Skillman SM, Mouradian WE. Growing the dental workforce to serve rural communities: University of Washington's RIDE program. *Gener J Am Soc Aging*. 2016;40(3):79-84.

Article on the challenges facing the population in Washington State and how the University of Washington developed a program for dental students to train in rural and underserved communities in order to increase recruitment and retention of dental providers in these areas

Older adults are at risk for health problems due to the shrinkage of gum tissue, which leaves the roots of the teeth more vulnerable to dental caries. Dental caries, in turn, can have adverse effects if the individual has any health conditions (eg, diabetes) that increase the risk of oral infection and inflammation. Older adults who have dentures also may not recognize that they are still at risk for cancerous lesions and should still receive routine oral examinations and evaluation of their dentures. Poor oral health in older adults can lead to malnutrition if there is overconsumption of soft foods that are of poor nutritional value and have a higher potential for causing cavities. Timely access to dental health care services can address many of these problems facing older adults; however, access to care, especially in rural areas, is a challenge. In the US overall, 15% of the population is 65 years of age and older, while 20% of those living in rural areas are 65 and older. The percentage of individuals aged 65 and older in rural areas is expected to increase as the “baby boomers” continue to age. It has been shown that there are higher rates of dental caries and permanent tooth loss in rural populations compared with urban populations. One of the many reasons why individuals in rural areas face challenges in accessing dental care is a shortage of health professionals in these areas. Within the US, more than 46 million people live in a federally designated Dental Health Professional Shortage Area. Rural residents also typically rely on well water, resulting in less exposure to fluoride—a critical intervention for the prevention of dental caries—relative to urban residents. Approximately 70% of Americans aged 65 and older do not have any form of dental insurance. Older adults who rely on Medicare have difficulty receiving dental care because their insurance does not cover routine oral health services. In contrast, Medicaid does cover oral health services, though it is difficult to find a provider who will accept Medicaid. In addition, if there are concerns with funding, Medicaid dental benefits are typically the first to be cut, leaving these individuals seeking care for oral health issues in emergency rooms. Washington State recognized the disparity between access to oral health services in urban and rural areas and developed a program through the University of Washington School of Dentistry to address this issue. The program, called Regional Initiatives in Dental

Education (RIDE), places dental students in rural underserved communities to complete their training. In addition, students are taught a course on oral health care in the elderly as well as more in-depth skills for addressing more severe oral health issues, with the aim of increasing students' comfort with performing diverse services in a rural areas with fewer specialists. Finally, this program employs a mentorship model in that students work in federally qualified health centers (FQHCs) with other health care providers as well as with experienced dental providers who are established within the community.

Vashishtha V, Kote S, Basavaraj P, Singla A, Pandita V, Kaur Malhi R. Reach the unreached—a systematic review on mobile dental units. *J Clin Diagn Res.* 2014;8(8):ZE05-ZE08.

Systematic review of the literature on the effectiveness of using mobile dental units as an adjunct to oral health services

Mobile clinics allow access to dental care for those individuals in medically underserved, poor urban and remote rural locations. Children living in these areas are able to receive access to necessary dental care through school-based mobile dental clinics. These types of mobile clinics allow flexibility in addressing temporal, geographic, and cultural barriers to health care utilization. By traveling to the population in need, they increase accessibility to health care services in this population. Mobile dental clinics enable rural communities to receive education on oral health in addition to the provision of more comprehensive oral health care. One challenge with mobile dental clinics is that they need to be tailored to meet the needs of the community in which the services are being provided. Research has shown that there are many pitfalls and failed programs when it comes to mobile dental clinics. It is important to ensure that these programs align with the geographic area, target population, and parent company's mission and needs. However, running mobile dental clinics in conjunction with fixed sites helps to address the transportation barrier, which in turn ameliorates the “no-show” problems that many fixed sites face. Overall, this systematic review found that mobile dental units are an effective adjunct to oral health services delivery.

Dye BA, Thornton-Evans G, Li X, Iafolla TJ. *Dental Caries and Sealant Prevalence in Children and Adolescents in the United States, 2011–2012*. NCHS Data Brief No. 191. Hyattsville, MD: National Center for Health Statistics; 2015. <http://www.cdc.gov/nchs/data/databriefs/db191.pdf>. Accessed August 2, 2017.

Report describing the prevalence of dental caries and sealants among youth in the US for 2011–2012, using data from the National Health and Nutrition Examination Survey (NHANES)

For the period 2011–2012, 37% of children aged 2 to 8 years had dental caries, while 14% of children aged 2 to 6 years had untreated tooth decay in primary teeth. In adolescents aged 12 to 19 years, 58%

experienced dental caries in permanent teeth and 15% had untreated caries in permanent teeth. Thirty-one percent of children aged 6 to 8 years, 49% of children aged 9 to 11 years, and 43% of children aged 12 to 19 years had at least 1 dental sealant on a permanent tooth.

Ettinger RL, Cowen H. A comprehensive geriatric dentistry teaching and service program. *Gener J Am Soc Aging*. 2016;40(3):66-69.

Report describing a dentistry teaching and service program that was created at the University of Iowa College of Dentistry to address a need for oral health services in the local geriatric population

University of Iowa College of Dentistry faculty identified a need to provide dental students with specific training regarding geriatric oral health. Through this training, students were taught how to identify the variations between biological aging of the mouth and the pathological effects of an oral disease and how to properly treat elderly patients. In addition to implementing the geriatric oral health curriculum, the University created an elective geriatric mobile clinic program to meet the needs of their aging population. Through this mobile clinic, students are taught how to provide comprehensive care while using portable equipment. These students travel to their patients, who reside primarily in nursing homes. This mobile clinic addressed a primary barrier faced by aging patients when trying to access care; moreover, the training of students on more complex, “surgeon-like” care benefited patients by providing access to more complete care. In addition to receiving training in geriatric care and the use of portable equipment, dental students are paired with doctor-of-pharmacy students so that they may better understand the patients’ complex drug histories. Overall, this report addresses the general need of the elderly population to access and receive oral health care and brings attention to the advantages of geriatric dentistry training in dental schools.

Molete MP, Chola L, Hofman KJ. Costs of a school-based dental mobile service in South Africa. *BMC Health Serv Res*. 2016;16(1):590.

Report on a cost-analysis study of a school-based mobile dental unit and oral health care program in South Africa

The school-based mobile dental unit of the University of the Witwatersrand, South Africa, was implemented to provide early oral health intervention (free oral health screenings and preventive care) and ameliorate the burden of untreated tooth decay in children attending socially deprived schools in Johannesburg. The objective of this study was to estimate the general costs of the mobile dental unit and the cost per patient of providing oral health care. The vehicle that was used to provide mobile dental care was a 4-ton truck carrying 2 water tanks (one for fresh water and the other for contaminated water) and containing 2 foot-controlled dental chairs with built-in operating lights. The chairs were connected to

dental units consisting of mountings for a 3-in-1 syringe, low- and high-speed hand pieces, saliva ejector, and high-volume suction. The study was able to determine only the cost of managing the mobile unit and was unable to estimate the cost at the patient level to access the facility. The cost of managing the mobile unit included salaries, equipment, materials, and supplies. It was estimated that the mobile dental unit could screen roughly 2,459 and treat 1,094 children annually. The total economic cost for maintaining the mobile dental unit was \$76,048 (in US dollars). Over a 5-month period, the average cost of a screening was \$80 and of treatment was \$180; however, when the number of patients was increased to represent an entire year, the cost of a screening dropped to \$31 and of treatment to \$69. Results from this study revealed that personnel costs were the highest cost drivers for mobile dental units, followed by the cost of the vehicles, equipment, and dental materials. The investigators noted that utilizing dental therapists could help to address the cost of personnel and that community engagement in the mobile program aids in its sustainability.

Brown EJ. Dental hygienist providers in long-term care: meeting the need. *J Evid Based Dent Pract.* 2016;16(suppl):77-83.

Article supporting the inclusion of dental hygienists into the care team at long-term care settings

In 2013, it was reported by the Administration on Aging that 44.7 million Americans are older than 65 years of age, and this number is expected to double by 2060. The Congressional Budget Office reported in 2010 that 13% of elders aged 65 years and older lived in nursing homes, while another 5% lived in a residential care or similar type of institution. It is estimated that, by 2050, 27 million Americans will be living in nursing homes or other residential settings and requiring assistance. Nearly 25% of these elderly adults are lacking teeth, leaving roughly 75% or 6.7 million elders in long-term care settings with teeth and in need of oral care. Most of the long-term care facilities and nursing homes are for-profit, while some are nonprofit and the remainder are government owned. Medicaid and Medicare provide most of the funding for these facilities, which can be a challenge as oral health reimbursement rates tend to be low and justification of the care provided is required in order to receive reimbursement and must be documented at multiple levels. In addition, the amount of reimbursement for oral health that is covered by Medicaid varies by state. Thirty-eight states currently permit some form of direct access to care provided by a dental hygienist; in 17 of these states, Medicaid directly reimburses dental hygienists. The dental providers who provide care in these facilities typically provide care using portable equipment due to the lack of space within the various facilities to store equipment permanently. Traditionally, nurse assistants in long-term care facilities provide the majority of care to the residents, including bathing, dressing, toileting, feeding, and oral care. These nurse assistants are required by federal standards to complete a minimum of 75 hours of training and to pass a competency examination and a state examination in order to be certified or licensed, with the specific requirements for certification varying by state. Because nurses are trained on so many topics to prepare them to properly care for residents, oral care receives very little emphasis.

Among the barriers that nursing assistants face in providing residents with oral care are lack of adequate training, refusal of care by residents, and the staff's dislike of oral fluids, all of which can result in care that is not implemented correctly or consistently. It has been shown that when a dental hygienist working in the facility takes on the role of teaching oral health care procedures to both staff and residents, the latter parties are more receptive to the material. Moreover, this helps to foster a relationship and establish trust between staff and residents in that improvement of oral health ultimately benefits the residents. Overall, this article supports the inclusion of dental hygienists in long-term care settings to help increase access to and provide beneficial oral health care services for individuals living in long-term care facilities who are no longer able to access private dental offices.

Association of State and Territorial Dental Directors. Mobile and portable dental services in preschool and school settings: complex issues [issue brief]. February 2011. <http://www.astdd.org/docs/mobile-portable-astdd-issue-brief-final-02-29-2011.pdf>. Accessed August 2, 2017.

Brief describing the issues that mobile and portable dental services face when providing services in school-based settings

In 1914, Dr Alfred Fones began the first school dental health program in Bridgeport, Connecticut, for grades 1 through 5. This increased attention to school-based dental programs aided the development of the dental hygiene profession. The program used portable equipment in order to increase access to dental care services and provided basic restorative care, with an emphasis on preventative services. Over the first 5 years, the program saw a reduction of nearly 34% in the number of dental caries in permanent teeth among participating children. Since that time, dental care programs have been incorporated into school-based facilities in various ways. School-based dental care programs may be integrated into existing school health centers, may operate as stand-alone dental services, or may comprise dental professionals at health centers within the community who provide services as coordinated by the school or district. In addition, mobile and portable dental care services are being utilized in order for dental professionals to expand the types of services they provide. Mobile and portable dental care programs are typically funded through a combination of grants, public and private insurance, agency budgets, and other sources. The services provided through these programs include dental screenings, preventive care (eg, dental sealants, topical fluoride), and comprehensive care (eg, restorations, extractions); if more complex care is required, patients are referred to specialists. Head Start programs represent the most receptive school-based setting for mobile and portable dental programs because these programs are required to meet certain performance criteria related to health. However, despite support from Head Start programs and studies demonstrating the effectiveness of mobile and portable dental programs, such programs continue to face barriers. Some dental professionals remain uncomfortable providing care in settings other than a fixed clinic, and care provision in such settings can be challenging in terms of finding a private, dedicated space in which to set up portable equipment. Providing care outside of a traditional clinic also is associated

with increased liability, and funding of these programs does not provide stable reimbursement for a long period of time. Different states have different reimbursement rates as well as diverse regulations regarding scope of practice for the dental professionals providing the care. Finally, national and state data on the use of mobile and portable dental care services are not available, making it difficult to analyze the effectiveness of these methods to provide access to oral health care services over a period of time.

Mobile dental team provides care to elderly in Nebraska, Iowa. American Dental Association website. <http://www.ada.org/en/public-programs/action-for-dental-health/action-for-dental-health-success-stories/mobile-dental-team-provides-care-to-elderly-in-nebraska-and-iowa>. Published September 23, 2014. Accessed August 2, 2017.

Brief article informing the public of a success story in Nebraska and Iowa pertaining to a mobile dental program

It is widely recognized that the elderly population, specifically in nursing homes, has more difficulty accessing dental care than any other group in the US. Many of these individuals suffer from chronic conditions that impair their ability to properly brush their own teeth. In addition, when elderly individuals transition to nursing homes, they often lose contact with their primary care dentists. In order to address this barrier, dental teams in Nebraska and Iowa use large vans to make regular visits to roughly 25 nursing homes to provide onsite dental services. Each van contains 2 dental chairs and a dental team consisting of a dentist, dental hygienist, patient manager, and business manager. Patients to receive dental services are brought out to the parking lot of the nursing home and receive care in the van, which is wheelchair accessible. The implementation of the mobile van program has enabled these patients to receive the oral care they need, ranging from basic cleanings to bridges and extractions.

Dentists go mobile for senior living. Senior Housing News website. <http://innovation.seniorhousingnews.com/dentists-go-mobile-for-senior-living>. Accessed on August 2, 2017.

Article describing success stories of mobile and portable dental services provided to seniors

For individuals residing in senior living facilities, transportation to and from a dental office can be challenging and typically requires the help of the elder's adult children. Cost also can be a barrier for the elderly population, as the dental coverage provided by Medicaid varies by state and Medicare does not cover most routine dental procedures. The American Dental Association reports that 1 in every 5 people over the age of 75 has not seen a dentist in the past 5 years. In order to address these issues, the School of Dental Medicine at Case Western Reserve University in Cleveland, Ohio, began looking into adding a geriatric component with hands-on activities into its curriculum. The dental students at Ohio State University currently participate in hands-on activities using a mobile van to provide dental care at community-based facilities. The mobile van accepts Medicaid, and patients who are not covered by

Medicaid are charged a reduced rate for dental care services. Aside from being trained on how to work with a mobile dental van, students are also taught how to manage elderly patients, discussing various medications the patients might be taking and addressing different courses of action. A Senior Mobile Dental service in Colorado provides care differently from Ohio State's dental students.

Unlike the Ohio State program, the Senior Mobile Dental service uses portable equipment that is brought directly into the facility. Each state has different regulations regarding scope of practice; in Colorado, dental hygienists are allowed to work independently from dentists, making them the first point of contact for seniors who are being provided with dental care. To date, the Senior Mobile Dental service estimates that some 600 seniors have been provided care since the beginning of the program in 2007. Thus far, the Senior Mobile Dental service has seen great success in providing seniors with dental care; the program has expanded to 7 skilled nursing and long-term care facilities and also is being replicated in Minnesota.

Nash DA, Mathu-Muju KR, Friedman JW. Ensuring access to oral health care for children: school-based care by dental therapists—a commentary. *J Sch Health*. 2015;85(10):659-662.

Commentary identifying problems with dental disease and lack of access to dental care for children in the US and how the implementation of school-based care can address these disparities

It has been estimated that about 60% of children between the ages of 5 and 17 years in the US are affected by tooth decay. Children lose roughly 52 million hours of school time each year due to dental problems. Children who experience tooth decay are more likely to have lower grades in school as well as negative experiences due to restriction from various activities. It has also been reported that parents miss up to 2.5 days of work annually, on average, while addressing a child's dental problems. Social and economic issues such as lack of transportation, inconvenient location of dental clinics, out-of-pocket expense, and poor health literacy of the parents often prevent these children from receiving care. In order to address such issues, other countries have implemented dental therapists in school-based settings. The first school to utilize dental therapists was in New Zealand, where the dental therapist conducted diagnostic and preventive services to children under the supervision of a dentist. Since the implementation of this program in New Zealand, more than 50 other countries have introduced dental therapists into their schools to provide children with dental care, resulting in declines in tooth decay with corresponding increases in treated teeth among schoolchildren. The integration of oral care into schools has enabled children to receive appropriate care in a setting in which the children in need are readily accessed. In addition, providing care to children at school allows parents and guardians to remain at work. Overall, having dental therapists provide dental care to children in school-based settings has proven beneficial; however, concerns also have been raised that insufficient training of dental therapists could lead to poor outcomes.

Appendix D

STATE LAWS AND REGULATIONS

This appendix attempts to catalog state laws and regulations related to mobile and portable dentistry, including operation and personnel requirements, referrals, record-keeping, exemptions and exclusions, services provided, population and/or insurance requirements, certification and registration of a van, and equipment requirements for a van. There is little codification of rules for the practice of portable dentistry in states at the present time. As of this writing (January 31, 2017), fewer than 20 states have clearly defined statutes on mobile and portable dentistry. Of those, the majority of provisions refer to mobile dental units.

The lack of official regulation is, however, not necessarily an impediment to operation; in several states with no specific laws, mobile vans are providing services. A few states were found to have guidelines issued by state health institutions and/or dental boards that were not in formal statute or regulation.

It is important to note that legislation on this subject is currently being reviewed and updated in many states. For more information on a specific state, please contact the state dental board.

Alabama

Reference: Dental Practice Act, §34-9-6.1

Definitions:

- **Dental Home:** Ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care, delivered in a comprehensive, continuously accessible, coordinated, and family-centered way
- **Mobile Dental Facility:** Any self-contained facility in which dentistry or dental hygiene is practiced that may be moved, towed, or transported from one location to another
- **Operator:** Person licensed to practice dentistry in the state or an entity approved as tax exempt under Section 501(c)(3) of the Internal Revenue Code
- **Portable Dental Operation:** Use of portable dental delivery equipment that is set up onsite to provide dental services outside of a mobile dental facility or a dental office and uses non-fixed dental equipment and independent plumbing

Application/Permit/Registration: In order to operate, must have certificate of registration from the board. Must include full name, address, and phone number of each dentist and dental hygienist working at the facility.

Driver: Must have a valid Alabama driver's license appropriate for the operation of the vehicle, which must be on file with the board at least 30 days prior to operating a mobile dental facility.

Equipment and Physical Requirements: Access via ramp or lift, sterilization system, ready access to potable water (including hot water), container for deposit of refuse and waste (covered, galvanized, stainless steel or other noncorrosive material), ready access to toilet facilities within the mobile dental facility. Access to an emergency kit, sharps containers, and red biohazard equipment onsite. Communication abilities to allow contact of necessary parties in event of a medical or dental emergency.

Informed Consent: No services may be performed on a minor without signed consent of parent or guardian using a form established by the board. Specific information is required on the form, including whether the patient has received dental services within 1 year from a licensed dentist. Name, address, and phone number of dental home is requested.

Record-keeping: Written or electronic information as to location at which services were performed, including street address, dates, number of patients served, types of dental services provided, and quantity of services provided. All records are to be maintained at official business address when not in transit, and official business address and phone number of record for the mobile dental facility are to be available from or on all written or printed documents issued.

Referrals: If no dental home, operator is to contact Alabama Medicaid Agency to identify a dental home for Medicaid-eligible patients. Operator is to contact the dental home, obtain an appointment, and encourage patient or guardian to seek care from the dental home. Form specifies that the prospective patient has a right to receive dental care from the mobile dental facility or his/her designated dental home, if applicable, and requires signature of parent or legal guardian.

Standards of Operation and Practice: Dental facility must be registered in the state and in possession of all county and city licenses or permits to operate in each location (license, permit, inspection); must have an official business address (not a post office box) within the state; must be associated with a dental facility with an official business address on record with the board (address filed with board with application for certificate of registration); and must have an official telephone number that is 24-hour accessible on application for registration and with 911 capability. Change of address, phone, or location must be sent to board within 30 days of change, along with method by which patients shall be notified. Mobile dental vehicle must be registered in the state. Written procedures required for emergency follow-up care at a dental facility within a 50-mile radius. If there is not arrangement for follow-up care with an established practice, the follow-up care must be provided or arranged by the operator or else they will have been deemed to have abandoned the patient. Requirement of compliance and conformance with Occupational Safety and Health Administration (OSHA), Centers for Disease Control and Prevention (CDC),

and Alabama Department of Public Health rules and regulations, as well as any other applicable federal, state, or local laws, regulations, guidelines, or ordinances, including those related to radiographic equipment, flammability, construction, sanitation, medical waste transportation, zoning, prevention of infection and disease, facility operation, and licenses or permits to operate.

Information for Patients: Each patient must be informed of the name of dentist or dental hygienist, or both, who performed services; description of treatment rendered, including billing service codes and fees as well as tooth numbers; if applicable, name, address, and phone number of any dentist to whom patient was referred for follow-up care and reason for referral; name, address, and phone number, if applicable, of parent or guardian of patient.

Inspection Requirements: Mobile dental facility or portable dental operation shall be inspected by the board or its representative prior to receiving a certificate of registration. After registration, it will be subject to periodic unannounced audits and inspections.

Liability Coverage: Proof of insurance required, with at least \$1 million of general liability coverage.

Notifications: Notification of change of address, location, or telephone number (within 30 days of change); change in the employment of any dentist or dental hygienist working at the facility or operation (within 15 days of change); if mobile dental facility or portable dental operation is to be sold, notification at least 10 days prior to finalization of sale; change in emergency follow-up care procedures (within 10 days of any change); and any change made relating to a dentist to whom patients are referred for follow-up (within 10 days of any change). If operator is an Alabama Medicaid-enrolled provider, operator shall disclose purchaser to the board and to state Medicaid agency via certified mail within 10 days after sale is finalized. In case of closure, if operator is an Alabama Medicaid-enrolled provider, notification must be given to the board at least 30 days prior to cessation.

Other Statutory Requirements: See Section 34-9-18.

Exemptions: Toilet facilities are not required for operators applying for certificate prior to July 1, 2008. Governmental entities need only have ready access to toilet facilities and are not required to have or maintain general liability coverage. Jefferson County Department of Health mobile dental facilities operating within Jefferson County prior to December 31, 2007, are not covered by these regulations.

Portable Dental Operation:

- Official business address—not a post office box
- Associated with an established dental facility with an official business address on record with the board
- Application for registration with business address
- Official telephone number accessible 24 hours a day
- Notification within 30 days of any change in address, location, or phone number of record, and method by which patients will be notified of changes [patient: individual who has received treatment or consultation of any kind within 2 years of date of proposed change]
- Records maintained at the official business address when not in transit
- Written procedure for emergency follow-up care for patients treated in portable dental operation, including arrangements for treatment in a dental facility permanently established within a 50-mile radius
- Communication abilities to enable patient, parent, or guardian to contact operator for emergency care, follow-up care, or information about treatment. Provider rendering treatment must be able to contact operator and receive treatment information, including radiographs
- Compliance with all applicable federal and state laws and rules of the board
- No services may be performed on a minor without parental or guardian's consent
- Operator shall contact Alabama Medicaid Agency if patient does not have a dental home
- Operator shall contact the designated dental home if patient has one and convey patient's interest in receiving care
- Consent form shall document that prospective patient knows there is an option to receive dental care from portable dental operation or dental home, if applicable
- Consent form must be signed by patient, parent, legal guardian
- Written or electronic record shall be maintained detailing location where services were performed, street address, date(s) of session, number of patients served, types of dental

services provided, quantity of services provided, and other information requested by the board

- Shall be inspected by the board or its representative prior to registration, then subject to periodic unannounced inspections
- Compliance with infection control practices promulgated by CDC
- General liability coverage of \$1 million at all times
- Notification of change of employment of any dentist or dental hygienist within 15 days of change
- Information provided to patient at conclusion of visit as to name of dentist and dental hygienist who performed services; description of treatment, including billing service codes and fees and tooth numbers; name, address, and phone number of any dentist to whom patient was referred for follow-up; name, address, and phone number of parent or guardian of the patient

In the above, “board” refers to the Board of Dental Examiners.

Arizona

Reference: Title 32 (The Dental Practice Act), Article 8, §32-1299.21

Definitions:

- **Mobile Dental Facility:** Facility in which dentistry is practiced and which is routinely towed, moved, or transported from one location to another
- **Permit Holder:** Dentist, dental hygienist, denturist, or registered business entity that is authorized to offer dental services in Arizona, or a nonprofit organization, school district, or school or institution of higher education that may employ a licensee to provide dental services and that is authorized to operate a mobile dental facility or portable dental unit
- **Portable Dental Unit:** Nonfacility in which dental equipment used in the practice of dentistry is transported to and used on a temporary basis at an out-of-office location
- **Active Patient:** Any person whom the permit holder has examined, treated, cared for, or consulted with during the 2-year period before discontinuation of practice

Application and Permit: Beginning January 1, 2012, every mobile dental facility and every provider, program, or entity using portable dental units in the state must obtain a permit. Permit must be renewed annually not later than the last day of the month in which the permit was issued. Change of ownership renders existing permit invalid; new permit application must be submitted.

Exceptions: A licensee without a permit for a mobile dental facility or portable dental unit may provide dental services if provided occasionally to a patient of record of a fixed dental office who is treated outside of the dental office; provided by federal, state, or local government agency; occasional services are provided outside of the licensee's office without charge to patient or third party; licensee holds valid permit to provide mobile dental anesthesia services; licensee is an affiliated practice dental hygienist.

Informed Consent: Required from patient, parent, or guardian of a minor for services in writing or by verbal communication that is recorded by an electronic or digital device. Must remain in the patient's record. If services provided to a minor, the signed consent form or verbal communication must inform parent or guardian that treatment in mobile dental facility or portable dental unit may affect future benefits the minor may receive under private insurance, the Arizona Health Care Cost Containment System, or the children's health insurance program.

Notifications: Change of address or contact person (within 10 days of change); cease to operate (within 30 days after last day of operation), with report on disposition of patient records and charts. Permit holder must also notify active patients of disposition of records or make arrangements to transfer records, including copies of radiographs, to a succeeding practitioner or to the patient.

Patient Information Sheet: At conclusion of visit, patients receive sheet with contact information for the mobile facility or portable unit; name of dentist or dental hygienist or both; description of treatment rendered, including billed service codes, fees, and tooth numbers if appropriate; and referral information to another dentist if necessary. Patient information sheet shall be provided to an institutional facility if patient or minor patient's parent or guardian has provided written consent to an institutional facility to access the patient's dental health records.

Referral: Permit holder shall refer patient for follow-up treatment with a licensed dentist or the permit holder if treatment is clinically indicated.

Requirements: Compliance with all federal, state, and local laws, regulations, and ordinances.

Standards of Operation and Practice: Must have 24-hour accessible phone number listed. Access to an adequate supply of potable water also required.

Arkansas

Reference: Dental Practice Act, Subchapter 6

Definitions:

- **Dental Home:** Licensed dental care provider who has an ongoing relationship with a patient, including comprehensive oral health care that is continuously accessible, coordinated, family centered, and provided in compliance with the American Dental Association beginning not later than 1 year of age
- **Mobile Dental Facility:** Self-contained, intact facility in which dentistry and dental hygiene are practiced and which may be moved, towed, or transported from one location to another
- **Operator:** Individual licensed to practice dentistry in the state
- **Patient:** Individual who has received treatment or consultation of any kind within 2 years before the date of change of address, location, or telephone number of record

Application and Permit: Application must be made to Arkansas State Board of Dental Examiners with \$5,000. Application must include full name, address, and phone number of each dentist and dental hygienist who will work in the mobile facility, official business address and telephone number of record of the operator, and written procedure for emergency follow-up. Proof of insurance with at least \$1 million in general liability coverage in force must be maintained during time operator holds a permit. All applicable county and city licenses and permits to operate at each location shall be obtained. Inspection by the Arkansas Board of Dental Examiners or its representative required prior to receiving permit.

Consent Forms: Consent form required of adults; no services may be performed on a minor or incapacitated individual without signed informed consent of parent or guardian. Form must specify that services may be received at the patient's dental home rather than the mobile dental facility. Form must ask if minor received dental care from licensed dentist during previous year or from a mobile dental facility. Form must document that prospective patient or parent or legal guardian may choose to receive care at any time from dental home rather than mobile facility and must be signed by prospective patient.

Driver: Must have valid Arkansas driver's license appropriate to the operation of the vehicle. Copy must be submitted to the board at least 30 days before the individual operates the mobile dental facility.

Emergency Procedures: Written procedure for emergency follow-up, including follow-up treatment in a permanent dental facility within a 50-mile radius of location where services were provided. Requirement that operator provide necessary follow-up at mobile or fixed facility or at any other established dental practice that will accept the patient. Communication facility in event of medical or dental emergency.

Equipment and Physical Requirements: Ramp or lift; properly functioning sterilization system; access to adequate supply of potable water, including hot water; noncorrosive container for deposit of refuse and waste materials; ready access to toilet facilities; communication facilities to contact parties in emergency and to enable patient, parent, or guardian to contact operator for emergency care or follow-up or to obtain information about treatment. Must be capable of transmission of radiographs.

Exclusions or Exemptions: Article XVIII, ACA 17-82-601, regulatory requirements covering mobile dental facilities specifically state that they do not apply to portable equipment.

Notifications: Change of employment of dentist or dental hygienist (within 15 days); change relating to dentist to whom patient was referred for follow-up treatment (within 10 days); change in procedure for emergency follow-up care (within 10 days); sale of mobile dental facility (10 days after date on which sale is finalized); cessation of operation (30 days before). Patients must be notified when operation is ceasing with manner and procedure for obtaining their records or having records transferred to another dentist. Record-keeping: Dental and official records shall be maintained at the official business address when the mobile dental facility is not in transit. Operator must maintain written or electronic record detailing each location at which services were performed, including street address, date(s) of each session, number of patients served, and types and quantity of dental services provided.

Referrals: If dental home for a minor is specified, operator is to contact dental home and notify of the minor's interest in receiving services. Operator is to encourage minor and parents or guardian to seek care from the dental home.

Requirements: Operator must maintain an official business address (not a post office box) within the state and be associated with a non-mobile dental facility with an official business address on record with Arkansas State Board of Dental Examiners. Official phone number must be accessible 24 hours a day and have 911 capability. Failure to arrange for follow-up care shall be deemed abandonment. Compliance with CDC infection control practices required. Patient information sheet must be provided at conclusion of patient's visit that includes name of dentist or dental hygienist, or both, who performed services; description of treatment; billing service codes and fees; tooth numbers; name, address, and phone number of any dentist to whom the patient was referred; and, if appropriate, name, address, and phone number of parent or guardian of patient.

Restrictions: Services may be provided only when licensed dentist is physically present. Dental hygienist or dental assistant shall not be an operator.

Portable: A mobile dental facility does not include dentistry provided using portable equipment.

California

References: Section 1049, 16 CA ADC; Mobile Dental Clinic Permits Regulations—Business and Professions Code, Sections 1657, 1658.8; Health and Safety Code, Section 1765.105, 1765.130

Definitions:

- **Mobile Dental Clinic/Mobile Dental Unit:** Any self-contained facility in which dentistry will be practiced which may be moved, towed, or transported from one location to another

Application/Permit/Registration: A dentist wishing to operate a mobile dental clinic must apply to the board for a permit by providing evidence of compliance with the requirements of this section and paying the fee prescribed in Section 1021 for application for an additional office permit. The board is to inform an applicant in writing within 7 days as to whether the application is complete and accepted for filing or is deficient and what information is needed for completion. The board must decide within 60 days after the filing of a completed application whether the applicant meets the requirements of a permit. Permits to operate a mobile dental clinic are not transferable. Application fee is \$100.

An existing health facility or clinic must submit an application to the licensing and certification district office of the state department if they wish to operate a mobile unit. The application must include the expected hours and days of operation and the proposed area or areas where the mobile unit will be providing services. The state department must conduct an onsite inspection prior to granting a license that includes, but is not limited to, a review of policies and procedures.

Driver: Must possess a valid California driver's license.

Equipment and Physical Requirements: Communication facilities, ready access to a ramp or lift if services are provided to disabled persons, properly functioning sterilization system, access to adequate supply of potable water (including hot water), ready access to toilet facilities, and a galvanized stainless steel or other noncorrosive metal container for deposit of refuse and waste materials.

Exemptions/Exceptions/Exclusions: A mobile unit operating under the Mobile Health Care Services Act, or a mobile unit operated by an entity exempt from licensure under Health & Safety Code 1206(b), (c), or (h), is exempt from the requirement to register with the Dental Board. However, the owner or operator of the mobile unit must notify the Dental Board within 60 days of the date on which dental services were first delivered at the mobile unit.

Record-keeping: The dentist must maintain a written or electronic patient record at each location at which services are performed and provide a written procedure for follow-up care.

Renewal: Permit expires at the same time as the permit holder's dental license. Permit holder may apply for renewal and pay the fee set for renewal of an additional office permit.

Standards of Operation and Practice: A licensed dentist may operate one mobile dental clinic or unit registered as a dental office or facility provided the mobile unit is not designed to prevent or lessen competition in service areas. The dental board is to be notified within 60 days of the date on which dental services are first delivered or the date on which the mobile unit's application is approved, whichever is earlier. A mobile dental clinic must conform to all applicable federal, state, and local laws dealing with radiographic equipment, flammability, construction, sanitation, and zoning and must possess all applicable county and city licenses or permits required in order to operate a mobile dental clinic.

Inspection Requirements: Must pass periodic inspections and audits.

Other: A licensed dentist may operate a mobile dental unit provided by his or her property and casualty insurer as a temporary substitute site for the practice registered by him or her pursuant to Business and Professions Code, Section 1650, provided the licensee's registered place of practice has been rendered and remains unusable due to loss or calamity and the licensee's insurer registers the unit with the board in compliance with Section 1657.

Connecticut

No formal regulations currently exist in the Connecticut Dental Practice Act. However, a memorandum was issued in 2009 by the state's Department of Public Health in coordination with the Connecticut Dental Association to provide guidelines for schools on mobile dental vans.

Reference: <http://www.csda.com/docs/default-source/regulations/mobile-dental-providers.pdf?sfvrsn=4>
(see below)

MEMORANDUM

TO: School Superintendents, Principals, School Nurses and Local Health Directors

FROM: Connecticut Department of Public Health, Office of Oral Health and Connecticut State Dental Association

SUBJECT: Organizations Offering to Provide Oral Health Services in Schools

DATE: November 17, 2009

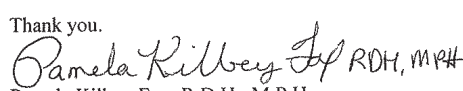
The CT Department of Public Health and the CT State Dental Association have received many questions from schools regarding new dental organizations (in addition to existing ones) offering to provide oral health services to children in the school setting. Usually these services entail dental screening, prevention and/or dental sealant application. Many of these services also entail the use of mobile dental units or portable dental equipment.


If your school is approached by a mobile oral health organization offering to provide services in your school, it is important that you are comfortable with the credentials and protocols of the organization. To assist you with this, we recommend that schools ask questions of the oral health care organization to ensure that:

- Dentists and dental hygienists providing services are licensed Connecticut dental providers.
- there is appropriate approval, generally from the superintendent and/or school committee, for these providers to practice in the school setting or in mobile dental unit providing care to the school's students.
- the mobile/portable oral health provider maintains an appropriate list of local dentists (including those who are HUSKY providers) who have agreed to provide follow-up treatment and/or emergency dental care to children for issues identified by the mobile/portable oral health providers. If possible, request a copy of the list and the signed memoranda of agreement.
- adequate parental information about the service and consent procedures are in place.
- parents are aware of the location of their child's dental records, including x-rays and that these are readily available to parents.
- there are procedures, with assigned responsibilities; for timely notification of parents and referral to local dentists should treatment needs be identified.
- there is a memorandum of agreement between the school district and the mobile/portable organizations, which outlines the responsibilities of each party.

If any questions remain, please contact the Connecticut Department of Public Health, Office of Oral Health at 860-509-8203 or the CT State Dental Association at 860-378-1800.

Thank you.


Pamela Kilbey-Fox, R.D.H., M.P.H.
Interim Director, Office of Oral Health
CT Dept. of Public Health


Carol Dingeldey, C.A.E.
Executive Director
CT State Dental Association

Illinois

Reference: 225 ILCS 25/50) (from Chapter 111, paragraph 2350), 225 ILCS 25/54.2)

Definitions:

- **Mobile Dental Van/Portable Dental Unit:** Any self-contained or portable dental unit in which dentistry is practiced that can be moved, towed, or transported from one location to another in order to establish a location where dental services can be provided

Record-keeping: Section 50—Patient records. Every dentist shall make a record of all dental work performed for each patient. The record shall be made in a manner and in sufficient detail that it may be used for identification purposes.

Dental records required by this Section shall be maintained for 10 years. Dental records required to be maintained under this Section, or copies of those dental records, shall be made available upon request to the patient or the patient's guardian. A dentist shall be entitled to reasonable reimbursement for the cost of reproducing these records, which shall not exceed the cost allowed under Section 8-2001 of the Code of Civil Procedure. A dentist providing services through a mobile dental van or portable dental unit shall provide to the patient or the patient's parent or guardian, in writing, the dentist's name, license number, address, and information on how the patient or the patient's parent or guardian may obtain the patient's dental records, as provided by law.

Indiana

Reference: Indiana Code, Indiana Administrative Code, Section 25-13-25-14, Article 4. Mobile Dental Facilities and Portable Dental Operations

Note: Applies to operators of a mobile dental facility or portable dental operation who provide dental services and do not have a physically stationary office in the county where the services are provided.

Definitions:

- **Mobile Dental Facility/Portable Dental Operation:** A self-contained facility in which dentistry will be practiced, which may be moved, towed, or transported from one location to another; or any non-facility in which dental equipment, utilized in the practice of dentistry, is transported to and utilized on a temporary basis at an out-of-office location, including but not limited to other dentists' offices, patients' homes, schools, nursing homes, or other institutions

- **Active Patient:** A person whom the mobile dental facility or portable dental operation has examined, treated, cared for, or otherwise consulted with during the 2-year period prior to discontinuation or practice, or moving from or leaving the community

Application/Permit/Registration: Must be registered with the board in order to operate. Application for registration required along with registration fee, evidence of compliance with requirements of the rules governing mobile dental vans and portable dental operations, and proof of radiographic equipment inspection with application for registration. Registration renewals required on March 1 of even-numbered years.

Driver: Must have a valid Indiana driver's license appropriate for the operation of the vehicle.

Equipment and Physical Requirements: Ready access to a ramp or lift if services are provided to disabled persons; properly functioning sterilization system; ready access to an adequate supply of potable water, including hot water; ready access to toilet facilities; and a covered galvanized, stainless steel, or other noncorrosive container for deposit of refuse and waste materials. Communication facilities to allow operator to contact necessary parties in the event of a medical or dental emergency and for patients or parents or guardians of patients to contact the operator.

Exemptions or Exceptions: Federal, state, and local government agencies are exempt; exception for dentists who have not registered with the board but provide emergency treatment for their patients of record using dental instruments taken out of a stationary office. Does not apply to dentists who do not operate a mobile dental facility or portable dental operation or are not employed by or independently contracting with a mobile dental facility or portable dental operation. Application exception for dentists who provide treatment for their patients of record in the county in which they maintain a physical stationary office or a county adjacent if such services are provided outside of the office or county for fewer than 30 days a year. Dental hygienists who are providing dental hygiene services, instruction, and in-service training are exempt from the requirements of the rule, provided they are in compliance with dental hygienist practice act.

Informed Consent: No services may be performed on a minor without a signed form from the parent or guardian. Form must indicate that if the minor already has a dentist, the parent or guardian should continue to arrange dental care through that provider, and that treatment through the mobile dental facility may affect future benefits the child receives under private insurance, Medicaid, or the children's health insurance program.

Information for Patients: Information sheet during or at conclusion of services must be given to patient with contact information for mobile or portable dental operator, name of dentist and other dental staff who provided services, description of treatment rendered, billed service codes and fees associated with treatment, and tooth numbers, when appropriate. If necessary, referral information to another dentist is required. Any institution for which the patient has provided consent for access to the patient's dental health records shall receive a copy of the information sheet.

Inspection Requirements: Proof of inspection of radiographic equipment must be submitted with application for registration.

Record-keeping: Operator must maintain a written or electronic record detailing the street address of service location, date(s) of each session, number of patients served, and types and quantity of dental services provided for each location at which services are provided. When not in transit, all dental and official records are to be maintained at the official office address of record, which may not be a post office box, and which is on file with the board.

Referrals: Arrangements must be made for follow-up treatment services that are indicated. A mobile dental facility that accepts a patient for preventive treatment, including prophylaxis, radiographs, and fluoride, but fails to follow-up with treatment when treatment is clearly indicated is considered to have abandoned the patient.

Standards of Operation and Practice: A dentist licensed to practice dentistry in Indiana must be present at all times that clinical services are rendered. A written procedure for emergency follow-up care is required, including arrangements for treatment in a dental facility permanently established in the area in which services were provided. Communication facilities are required that will enable the operator to contact necessary parties in the event of a medical or dental emergency and that enable the patient or the parent or guardian to contact the operator for emergency care, follow-up care, or information about treatment received. Must be capable of sending radiographs to provider who renders follow-up care. No one may be hired or permitted to work or perform services in or around a mobile dental facility or portable dental operation unless licensed by the board.

Notifications: Board must be notified within 30 days of any change in address or telephone number of record; written or electronic records must be made available to the board within 10 days of a request; notification of cessation of operation required within 30 days of the last day of operation. In the event of

discontinuation of practice of services in a community, all active patients must be notified in writing or by publication once weekly for 3 weeks in a newspaper with general circulation of operator's intention to discontinue practice in the community. Active patients are to be encouraged to seek the services of another dentist, and arrangements must be made for transfer of patient records, including radiographs or copies, to the succeeding practitioner or to the patient upon written request.

Other Statutory Requirements: Licenses for each dentist and dental hygienist providing dental services in the mobile dental facility or portable dental operation shall be prominently displayed in plain view of patients. Failure to comply with any of the rules regulating the practice of dentistry, dental hygiene, and operation of mobile dental facilities or portable dental operations will subject practitioners to disciplinary action.

Kansas

Reference: Kansas Dental Board Statutes, Chapter 65. Public Health, Article 14, Regulation of Dentists and Dental Hygienists, Section 65-146, and Article 8, Mobile Dental Facilities and Portable Dental Operations

Definitions:

- **Mobile Dental Facility/Portable Dental Operation:** Any self-contained facility in which dentistry will be practiced, which may be moved, towed, or transported from one location to another; or any non-facility in which dental equipment, utilized in the practice of dentistry, is transported to and utilized on a temporary basis at an out-of-office location, including, but not limited to, other dentists' offices, patients' homes, schools, nursing homes, or other institutions
- **Active Patient:** Individual whom the mobile dental facility or portable dental operation has examined, treated, cared for, or otherwise consulted with during the 2-year period before discontinuing practice

Applicability: Each regulation applicable to a stationary dental office applies to each mobile dental facility or portable dental operation.

Application/Permit/Registration: Application required for registration with a \$500 fee. Renewals are \$350, and application must be submitted in writing at least 60 days before expiration date.

Driver: Must possess a valid driver's license appropriate for the operation of the vehicle.

Exemptions/Exclusions: Federal, state, and local governmental agencies, dentists licensed to practice in Kansas providing emergency treatment for their patients of record, and dentists who are not employed by or contracting with a mobile dental facility or portable dental operation who provide nonemergency treatment for their patients of record outside of their physical office fewer than 30 calendar days per year. Dental hygienists are exempt. Dentists and dental hygienists providing services as charitable health care providers are exempt, as are not-for-profit organizations providing dental services.

Informed Consent: Signed consent form required for minors or individuals for whom a guardian has been established. Form must include authorization for treatment and acknowledgment that treatment could affect future benefits that the patient could receive under private insurance, Medicaid, or the children's health insurance program. Must also include acknowledgment that parent or guardian has been advised to arrange for continued dental care for the patient.

Record-keeping: Written or electronic records required that include, for each location services are provided, street address, date(s) of each session, number of patients served and types of dental services provided, and number of each type of service. Records must be made available to the board within 10 days of request.

Referrals: Required if necessary and must be listed on information sheet provided to patients.

Standards of Operation and Practice: Must have a business or mailing address (not a post office box) and phone number of record that appears on all written or printed documents issues by the van or operation. Communication facilities must be available to contact necessary parties if a medical or dental emergency occurs and that will enable patient, parent, or guardian to contact the operator. Providers rendering follow-up care must be able to contact van or operation for treatment information, including radiographs. The mobile dental facility or portable dental operation must meet the sterilization and infection control regulations of the state. If mobile dental facility or portable dental operation provides preventive treatment, including prophylaxis, radiographs, and fluoride, the operator must offer follow-up treatment when indicated. Upon discontinuation of service, active patients are to be notified in writing or by publication once weekly for 3 consecutive weeks in a newspaper of general circulation. Patients are to be advised to seek the services of another dentist and documentation must be made in the patient's dental record as to the date of advice and manner it was provided. Transfer of patient's records, including radiographs or copies, are to be transferred to a succeeding practitioner or upon written request by the patient, parent, or guardian to those individuals. All dental and billing records, when not in transit, must be maintained at the operator's address of record. A written procedure for emergency follow-up care is

required and must include arrangements for treatment in a health facility that is permanently established in the area.

Information for Patients: Information sheet must include address and telephone number of record of the operator; name of each dentist and dental hygienist who provided services; description of treatment, including the billed service codes; fees; tooth numbers with surface and quadrant descriptors, when appropriate; and the names and telephone numbers of the billing entity and any third party being billed. Must also include date of services and where services were rendered, name and phone number of entity to contact for information regarding processing and payment for billed services, and, if necessary, referral information to another health care provider.

Notifications: Change of address or phone number of record within 30 days of change; changes in personnel involving licensed dentists and licensed dental hygienists within 30 days of change; changes in written procedure for emergency follow-up within 30 days of any change; and notification of board within 30 days of cessation of operation.

Other Statutory Requirements: A corporation may not practice dentistry in Kansas and therefore is not authorized to operate a mobile dental facility or portable dental operation. Kansas dental license or dental hygienist license must be displayed in plain view of patients. If mobile dental facility or portable dental operation is sold, each new operator is required to file a new registration application and pay the associated fee.

Louisiana

Reference: Louisiana Administrative Code, Title 46, Part XXXIII

Definitions:

- **Mobile Dental Clinic/Mobile Dental Unit:** Any self-contained facility in which dentistry will be practiced which may be moved, towed, or transported from one location to another using fixed dental equipment and plumbing
- **Mobile Operator:** A dentist licensed in Louisiana who has registered a mobile dental clinic or mobile dental unit with the dental board pursuant to these rules and who provides dental services in a mobile dental clinic or mobile dental Unit either directly and/or through Louisiana licensed dentist associates

- **Mobile Operator Permit:** An authorization given to a Louisiana licensed dentist for the physical use of a mobile dental clinic or mobile dental unit in which to provide dental services. One mobile operator permit is required for each mobile clinic, regardless of the number of dentists who practice in the clinic
- **Operation:** The activity conducted by mobile or portable operators
- **Operator:** A licensed Louisiana dentist who has a current mobile or portable operator permit
- **Portable Dental Clinic:** The use of portable dental delivery equipment which is set up onsite to provide dental services at locations other than a mobile dental clinic or mobile dental unit and other than a dental office and uses non-fixed dental equipment and plumbing
- **Portable Operator:** A dentist licensed in Louisiana providing dental services at a location other than a mobile dental clinic or mobile dental unit and other than a fixed dental office either directly and/or through Louisiana licensed dentist associates. One portable operator permit is required for each set of portable dental equipment, regardless of the number of dentists who work in the portable dental clinic
- **Portable Operator Permit:** An authorization given to a Louisiana licensed dentist to provide dental services at locations other than a mobile dental clinic or mobile dental unit and other than a dental office. The portable operator permit is required of the owner of the operation and does not apply to any dentist employed or contracted with the owner of the operation
- **Active Patient:** Person whom the operation has examined, treated, cared for, or otherwise consulted with during the 2-year period prior to discontinuation of practice, or moving
- **Institutional Facility:** Includes but is not limited to a long-term care facility or school

Application/Permit/Registration: Application to the dental board for mobile dental clinic, mobile dental unit, or portable operator permit is required. Licensed dentists with an existing portable or mobile dental practice are entitled to continue operating under existing regulations until the necessary permits are granted, so long as all application and supporting documentation are submitted within 60 days of the state rule taking effect. Permits are not transferrable. The dental board is to receive a list of all sites, including addresses where mobile or portable activities are to take place at the time the permit is applied for, and it shall be updated every 30 days.

Equipment and Physical Requirements: Ready access to a ramp or lift if necessary, properly functioning sterilization system, ready access to adequate supply of potable water, ready access to toilet facilities, noncorrosive container for deposit of refuse and waste materials, emergency kit available at all

times, portable oxygen available at all times, sharps containers and red biohazard bags, properly functioning radiograph equipment producing fully developed x-rays of diagnostic quality, and suction equipment to achieve a minimum level of 3 cubic feet per minute. Equipment and supplies allow the dentist providing services to meet the prevailing standard of dental care and are subject to inspection by any dental board member, staff member, or agent of the dental board.

Exemptions/Exceptions/Exclusions: All federal, state, or local governmental agencies. Dentists licensed to practice in Louisiana who have not registered with the board to operate a mobile dental facility or portable dental operation may provide dental services without registering if the service is provided as emergency treatment for their patients of record. The services are limited to dental sealants, screenings, cleanings, radiographs, and fluoride treatments, provided such services are performed at no charge to the patient, the patient's parent or guardian, or any third-party payor. Also exempt are dentists licensed to practice in Louisiana who limit their mobile or portable practice to taking impressions and delivering mouthguards and removable dentures.

Informed Consent: No services may be performed on minors without a signed consent form from the parent or guardian that includes a statement that if the minor already has a dentist, the parent or guardian should continue to arrange dental care through the provider, and that a parent or guardian may attend all dental visits. The form must include a phone number and address for contact should the parent or guardian wish to be at the school, facility, or site when the minor is being treated. Notice to the parent or guardian must be given within 5 days of the date on which service is being provided. The operator is to make 2 more attempts to reach the parent or guardian if unable to reach them on the first attempt. No treatment is to be provided in those instances in which the parent or guardian requests to be present but does not appear.

Consent forms must include a telephone number for emergency services and the telephone number of the parent or guardian. In those instances in which there is no contact phone number, no dental services can be provided to that minor. Consent forms shall be provided in duplicate in order for the parent or guardian to have a copy. The form shall include confirmation that the patient, parent, or legal guardian understands that treatment through a mobile dental or portable dental provider may affect future Medicaid and insurance benefits for the patient for 1 year. The form must also include a conspicuous statement that the parent or guardian should contact the operator at the operator's toll-free number if the parent or guardian has any questions regarding the information provided or the form that is to be signed by the parent or guardian. A notation regarding all questions and answers between the 2 parties shall be placed in the patient's chart.

Record-keeping: Maintenance of an official business or mailing and actual, physical address of record which is not a post office box except where mail is delivered only to a post office box, and a 24-hour

emergency telephone number, shall be filed with the board. All records and documents issued from the operator or operation shall contain the official address of record. When not in transit, all dental and official records shall be maintained or available at the official address of record and provided at no cost within 24 hours via electronic means or within 72 hours by other means upon receipt of a HIPAA-compliant request with satisfactory release. Operator or operation is to make reasonable arrangements with active patients for transfer of patient records, including radiographs or diagnostic-quality copies, to a succeeding practitioner or, upon written request of the patient, to the patient.

Referrals: Referrals for follow-up treatment, when indicated, are required of an operator or operation that accepts a patient and provides preventive treatment, including prophylaxis, radiographs, and fluoride.

Renewal: Permits expire at the same time as the operator's dental license and are renewed at the time the operator renews his or her dental license using the renewal form and paying applicable fees.

Standards of Operation and Practice: All mobile or portable operations must conform to existing Dental Practice Act rules and regulations and federal, state, and local laws, regulations, and ordinances, including those relative to radiographic equipment, flammability, construction, sanitation, zoning, OSHA regulations, applicable CDC guidelines and prevention, and Louisiana Department of Health and Hospital regulations, including those for medical waste transportation; and the applicant must possess parish and city licenses or permits to operate the unit. All services must be provided in a clean, sanitary place.

All applicable licenses and permits must be prominently displayed. Documents may be kept in a notebook labeled "Licenses and Permits," and copies are acceptable.

Anesthesia shall be limited to local anesthetics only.

Communication facilities must be immediately available to allow the operator to contact necessary parties in the event of a medical or dental emergency, including 911 capabilities.

All dental health care providers of mobile or portable dentistry shall wear a name tag identifying them and their position in a conspicuous place.

All mobile or portable dentistry providers are to have written protocols for sterilization procedures, including where dedicated sterilization areas are located, and for transportation of all waste materials, instruments, and equipment.

Information for Patients: Parents and guardians must be given a complete listing of all procedures that may be performed, as well as a description of the risks and potential complications and a description of

all behavior management procedures that may be involved in the provision of dental treatment and associated risks. Parents or guardians must be encouraged to call the operator if they have any questions, and a check box or similar feature of notation must be included for each procedure listed, in addition to instructions as to how the parent or guardian may give permission for treatment of a minor for only those procedures specifically chosen from the list and the behavior management techniques. The form is to include a statement encouraging the parent or guardian to be present during the procedure in order to assist the dentist with behavior management. A notation must be included in the consent form that states that services cannot be rendered on a minor unless his or her medical history has been updated within the past 6 months. The form is to include a space for the parent to list any medical or dental problems the patient may have. A notice that the operator conforms with all federal and state privacy laws and practices is to be included on the form.

During or at the conclusion of the patient's visit, the patient, parent, or guardian is to receive an information sheet that includes a 24-hour, toll-free, in-state telephone number and address by which the parent, guardian, or patient can contact the operator's office for questions or emergency dental care; the name of the dentist who provided the services; a description of the treatment rendered; referral information, if necessary; and postoperative instructions, as necessary. The information sheet is also to be mailed to the patient's home, and if the patient has provided consent to an institutional facility to access the patient's dental health records, the institution should be provided with the information sheet.

Inspection Requirements: Inspection of mobile dental clinic, mobile dental unit, or portable dental clinic is required by a dental board member or a staff evaluator prior to receiving approval to operate.

Notifications: Notification of the dental board required for all personnel changes, including name, addresses, phone numbers, and license numbers relative to all licensed dentists and dental hygienists within 30 days; in case of cessation of operation, operator notifies within 30 days of the last day of operation as to final disposition of patient records and charts; in cases of discontinuance of operation, notification within 30 days as to where and how all patients may obtain dental records. The dental board is to be notified no later than 24 hours before providing dental services at a school, and the operator must provide the date, time, and identity of all dental health care providers and the location. If the location is a school, the operator must notify the principal of the school in writing before services are begun that the dental team is required by law to allow board inspectors on campus to conduct unannounced inspections. The notification letter must include the principal's name and phone number, and a copy must be sent to the dental board prior to initiating services at the school.

The dental board is to receive a list of all sites, including addresses at which mobile or portable activities are to take place at the time the permit is applied for, and it shall be updated every 30 days.

Other/Prohibition on Administrative Services or Management: An operator or operation may not contract with a company or entity for management or administrative services for which division of fees or other forms of remuneration are provided to someone not licensed to practice dentistry in the state. Fees may not be paid for referrals from non-dentists. This rule does not prohibit the establishment of partnerships or professional corporations and the sharing of professional fees or forbid a dentist licensed in the state from hiring another dentist licensed in the state. However, the operator must provide proof that the administrative company is authorized to conduct business in the state and has a valid Certificate of Good Standing issued by the Louisiana Secretary of State.

An administrative company may not perform any duties or services that are exclusively those of a licensed dentist, including ownership of a mobile or portable dental practice, provision of dental care, determination of what dental services should or should not be offered to a patient, establishment of infection control procedures and standards, determination of patient charges and collection policies, determination of when a patient should or should not be referred, establishment of HIPAA standards, or selection and employment of associated dentists and dental staff.

Maine

Note: Maine has no official regulations on mobile and portable dentistry. However, the Maine Center for Disease Control and Prevention issued guidelines for School Administrative Units in January 2012. Refer to referenced document at the end of this appendix.

Massachusetts

Reference: 234 CMR Board of Registration in Dentistry, Section 7.00: Mobile and Portable Dentistry

Definitions:

- **Mobile Dental Facility (MDF):** Any self-contained facility where dentistry will be practiced, which may be driven, moved, towed, or transported from one location to another
- **Portable Dental Operation (PDO):** Any dental practice where a portable dental unit is transported to and utilized on a temporary basis at an out-of-office location

Application/Permit/Registration: Permits may be issued to qualified dentist or dental hygienist with a valid license, provided the applicant has met eligibility requirements and submitted a complete application with permit fee. A licensee who intends to purchase or acquire control of an existing MDF or PDO must file an application for permit at least 30 calendar days before the anticipated sale or acquisition.

Driver: MDF or PDO must comply with applicable requirements for registration and operation of a motor vehicle being used for the provision of mobile or portable dental services.

Equipment and Physical Requirements: Communication equipment to ensure rapid access to emergency responders required. Handicap access, equipment and sterilization systems to comply with CDC guidelines, ready access to adequate supply of potable water, ready access to handwashing and toilet facilities, noncorrosive container for deposit of refuse and waste (as required by 310 CMR 73.00), and equipment necessary for services required.

Exemptions/Exceptions/Exclusions: Exceptions for licensees who use dental instruments and materials outside a dental office without an MDF or PDO permit if the service is provided as emergency treatment, a patient of record is homebound, or the services rendered are limited to dental screening only.

Informed Consent: To be obtained from patient or guardian prior to treatment.

Record-keeping: Must be maintained in accordance with 234 CMR 5.14 and 5.15. Treatment in a school setting requires a copy of consent granted by the patient or legal representative and copy of patient information sheet or other summary of screening, exam, or treatment to the official designated by the school. Treatment in a nursing home or residential treatment facility requires a copy of the patient's information sheet or other written summary of the screening, exam, or treatment to the official designated by the nursing home or residential treatment facility and shall become part of the patient's record. Log must be maintained with dates, locations at which services were provided, and names of all individuals providing services on behalf of the MDF or PDO.

Referrals: To dentists with whom the MDF or PDO has a relationship and within a reasonable geographic distance, in order to address emergent needs and achieve positive oral health outcomes. A written procedure for referral of patients for emergency or other follow-up treatment is required.

Renewal: Biennial, at time of applicant's license to practice dentistry or dental hygiene.

Standards of Operation and Practice: Official mailing address and phone number to be filed with the board. Operators who do not maintain an office in Massachusetts must file the name, address, and phone number of the entity's resident agent with the Massachusetts Secretary of the Commonwealth.

All written and electronic documents and publications must include the name of the MDF or PDO director and official phone and address. Signed written consent is required from patient or legal representative. Written procedures for referral for emergency or other follow-up treatment required; requirement to provide necessary follow-up treatment or make a timely referral by the patient's dentist or another dentist with whom the MDF or PDO has communicated regarding acceptance of referrals.

Where consent granted, subsequent provider must receive treatment information, including a copy of radiographs, within a reasonable period of time.

Any person providing dental services must wear a name tag with name, professional title, and function, and licenses and permits must be displayed at location where services are provided in an area where they can be viewed by patients.

Criminal Offender Record Information and background checks required for those personnel serving vulnerable populations (eg, children, the elderly, or people with disabilities).

Emergency protocol training required for all staff hired, with annual training thereafter.

When ceasing operations, arrangements must be made with patients to transfer records as well as radiographs or copies to a succeeding practitioner or, at request, to patient.

Information for Patients: At conclusion of visit, written report is provided to the patient or institutional facility, as appropriate, with the results of the dental and/or dental hygiene exam; name(s) of the licensed dentist and dental auxiliaries who provided services; description of treatment rendered, including billed service codes, fees, and tooth numbers; information on how to contact the MDF or PDO; a timely written referral to a dentist in order to address emergent needs; names of dentists or other organizations providing dental services within a reasonable geographic distance and with whom the MDF or PDO has communicated regarding acceptance of referrals; and signature of dentist or dental hygienist. If consent given for an institutional facility to access the patient's dental health records, the MDF or PDO will provide the institution with a copy of the information sheet. Patient must receive names of dentists, community health centers, or dental school clinics within a reasonable geographic distance from their home and with whom the MDF or PDO has communicated regarding acceptance of referrals.

Inspection Requirements: Board may require onsite inspection of the MDF or PDO prior to issuing permit.

Notifications: Upon cessation of operation and/or transfer of ownership or control, board must be notified within 30 days. All patients who have received treatment within 2 years of date of cessation must be notified by letter or electronically, or through publication in widely disseminated newspaper(s), as to how patients can obtain a copy of their dental records. Any and all entities for whom the MDF or PDO is providing services or who are hosting services must be notified 30 days prior to cessation or operation.

Michigan

Reference: Act No. 100, Public Acts of 2014, Part 216, Mobile Dental Facility, Michigan Department of Health and Human Services

Definitions:

- **Active Patient:** A person who has received any type of dental care in a mobile dental facility in the preceding 24 months
- **Assessment of a Patient:** Limited clinical inspection performed to identify possible signs of oral or systemic disease, malformation, or injury and the potential need for referral for diagnosis and treatment
- **Clinical Evaluation:** Diagnostic service provided by a dentist that includes a complete intra- and extraoral inspection and may include other modalities of examination to identify signs of oral or systemic disease, malformation, or injury, and may include the completion of diagnosis and treatment planning to determine the treatment needs of an individual patient
- **Comprehensive Dental Services:** Clinical evaluation, including diagnosis and treatment planning, imagery services, and indicated treatment, which may include preventative, restorative, and surgical procedures that are considered necessary for an individual patient
- **Dental Home:** Network of individualized care based on risk assessment that includes oral health education, dental screenings, preventative dental services, diagnostic services, comprehensive dental services, and emergency services
- **Department:** Department of Community Health
- **Imagery:** Visualization of oral and facial structures using specialized instruments and techniques for diagnostic purposes
- **Memorandum of Agreement:** Written documentation of an agreement between parties to work together cooperatively on an agreed-upon project or meet an agreed-upon objective
- **Mobile Dental Facility (MDF):** Either a self-contained, intact facility in which dentistry or dental hygiene is practiced that may be transported from one location to another, or a site used on a temporary basis to provide dental services using portable equipment
- **Operator:** Either an individual with a valid, current license to practice dentistry or dental hygiene in the state who utilizes and holds a permit for a mobile dental facility, or a

corporation, limited liability company, partnership, or any governmental agency contracting with individuals licensed to practice dentistry in this state or dental hygienists licensed in this state that utilizes and holds a permit for a mobile dental facility

- **Preventative Dental Services:** Services that include, but are not limited to, screening or assessment of a patient, prophylaxis, fluoride treatments, or an application of sealants (not including imagery studies)
- **Screening of a Patient:** Screening, including state-mandated or federally mandated screening to determine an individual's need to be seen by a dentist for diagnosis

Application/Permit/Registration: Permit required. Operator may hold a permit for 1 or more mobile dental facilities. Application is submitted not later than the last day of the month in which the permit expires upon submission of proof of compliance with requirements. Registration fee is \$270 for permit lasting 3 years. Permit is not transferrable. Fees applied to late renewals. Department of Health and Human Services either approves or denies application for a permit not later than 60 days after receiving. Application must include a list of each dentist, dental hygienist, and dental assistant who will provide care at or within the mobile dental facility, including, at a minimum, each individual's name, address, telephone number, and state occupational license number.

Equipment and Physical Requirements: Instrument sterilization system, potable hot and cold water or hand sanitizer, toilet facilities, smoke and carbon monoxide detectors (as applicable), radiographic equipment registered and inspected by the state, communication device continuously available for making and receiving telephone calls and summoning emergency services, proper lighting, portable suction, hand pieces, dental instruments, and supplies.

Exemptions/Exceptions/Exclusions: Exemption from regulations when MDF is used solely to provide services rendered without compensation.

Informed Consent: Written consent required of the patient or parent or guardian, if a minor or legally incapable of consent, before providing dental services. In a nursing home setting, the operator may obtain a physician's order from the patient's attending physician or the medical director of the nursing home. The form must contain the name of the operator, permanent address of the operator, phone number that patient may call 24 hours a day for emergencies, and a list of services to be provided. A statement indicating that treatment may be obtained at the patient's dental home rather than the MDF and that obtaining duplicate services at an MDF may affect benefits from private insurance, a state or federal program, or other third-party provider of dental benefits. If patient is a minor or incapacitated person, the written consent form must include a request for the name or contact information for the dentist or dental office that provided dental services in the past 12 months.

Referrals: If services are not being provided at the MDF, a reasonable attempt shall be made to refer the patient to a dentist or party who can arrangement for services. If patient is a minor or incapacitated, the operator shall make an attempt to contact a parent or guardian to inform them of the referral. Documentation shall be sent to the patient in the event that the operator is unable to make arrangements for continued treatment.

Renewal: Required by the last day of the month in which the permit expires.

Standards of Operation and Practice: A dentist must be present in the MDF at any time comprehensive dental services that are not preventative are performed on a patient. There is an exception for instances in which only preventative dental services are being provided, when imagery services are being provided under a Memorandum of Agreement (MOA), or when comprehensive dental services or imagery services are being provided in a nursing home, assisted living center, or other similar setting. In the instance of a referral to a specialist or other dentist, imagery records are to be transmitted when requested.

In the event of cessation of operation, operator is to provide written notice to all treatment venues. Operator is to also provide for availability of records to patient or patient's guardian for 180 days after the MDF ceases operation and, upon request, transfer the records to the active patient, the patient's parent or guardian, or another dentist. Alternatively, the operator may transfer the records to another dentist, if requested. Reasonable attempts must be made to reach active patients and parents or guardians to notify them that the records are available, and if transferred, the name and contact information for the dentist to whom the records were transferred. When requested by the department, documentation is required to demonstrate that a reasonable attempt was made to contact patients, parents, and guardians as well as information concerning storage and retrieval of the patient's records.

Information for Patients: Written treatment plan with copy to each patient and, if services are provided in a nursing home, to the facility for inclusion in the patient's chart. The plan must address comprehensive dental services to be provided either through the MDF or through an affiliated dentist, dental office, or party who can arrange for or provide services under an MOA.

Each person receiving dental services at an MDF is to receive information including the name of the dentist, dental hygienist, dental assistant, or party who arranged for or provided the dental services; the telephone number or emergency contact number to reach the MDF or operator in case of emergency; list of dental services rendered; description of any further dental services advisable or scheduled; and a referral to a specialist, dentist, or party who can arrange for comprehensive dental services if they cannot be provided at the MDF. The patient is also to receive a copy of the consent form.

Liability Coverage: Proof of liability covering the mobile dental facility that is issued by a licensed insurance carrier authorized to do business in the state is required.

Notifications: The department shall be notified within 30 days after any of the following: change in MDF operator, change in memorandum of agreement required for follow-up care, change in address or phone number, cessation of operation of the MDF, and any memorandum of agreement entered into after obtaining a permit.

Mississippi

Reference: Mississippi Dental Board Regulation Number 61 pursuant to Miss. Code Ann. § 73-9-13

Applicability: Operator of a mobile dental facility or portable dental operation who provides dental services and does not have a physically stationary office in the city or county where the services are provided.

Definitions:

- **Mobile Dental Facility/Portable Dental Operation:** Any self-contained facility in which dentistry will be practiced, which may be moved, towed, or transported from one location to another
- **Operator:** Person licensed to practice dentistry in the State of Mississippi who has registered a mobile dental facility or portable dental operation with the board
- **Active Patient:** Person whom the mobile dental facility or portable dental operation has examined, treated, cared for, or otherwise consulted with during the 2-year period prior to discontinuation of practice, or moving from or leaving the community

Application/Permit/Registration: Operator must possess a current mobile dental office registration obtained by completing an application, paying a fee (\$300), providing evidence of compliance with regulatory requirements, and submitting proof of approval of licensee's radiographic equipment. Application must provide list of names of dentists in land-based offices to whom patients will be referred for follow-up care and must include dentist's full name, office address, telephone number, and an attached statement from each dentist indicating responsibility for follow-up care. Referrals must be to dentists in same or adjacent county in which care was provided. Copy of van driver's license must accompany application.

Driver: Must possess valid Mississippi driver's license appropriate for operation of the vehicle. Copy of license must be submitted with application.

Equipment and Physical Requirements: Access to a ramp or lift, properly functioning sterilization system, adequate supply of potable water (including hot water), ready access to toilet facilities, and noncorrosive container for waste materials and refuse.

Informed/Signed Consent: No services may be provided on minors without a signed consent form from the parent or guardian that specifies that if the minor already has a dentist, care should be arranged through that provider and that treatment by the mobile dental facility or portable dental operation may affect future benefits the child may receive under private insurance, Medicaid, or the Children's Health Insurance Program (CHIP).

Record-keeping: Records must be maintained at official office address when not in transit; must have written or electronic record for each location at which services are provided, including the street address or service location, date(s) of each session, number of patients served, and types and quantity of dental services provided. Must be made available to the board within 10 days upon request.

Referrals: When further treatment is necessary, arrangements must be made for treatment services by either the operator or other licensee who agrees to provide follow-up care.

Standards of Operation and Practice: Requirements include official business and mailing address that is not a post office, telephone number with 911 capacity, and printing of official address and phone number on all printed or written documents; written procedure for emergency follow-up care, including arrangements for treatment with a dental facility permanently located in the area in which services were provided; and compliance with CDC's infection control practices. Dentist licensed in the state must be in charge at all times. Treating dentist must be present and will be held responsible for the quality of patient care at all times clinical services are provided.

Information for Patients: Information sheet with contact information for operator; names of dentist and other dental staff who provided services; description of treatment, with billed service codes and fees associated with treatment; tooth numbers, when appropriate; and referral information to another dentist. If consent has been given to an institutional facility to access the patient's dental health records, the information sheet shall be provided to the institution.

Inspection Requirements: Inspection by board member or a staff evaluator required prior to receiving approval to operate. Periodic unannounced audits may be conducted on mobile dental facility or portable dental operation.

Notifications: Change in address or phone number within 30 days of any change; cessation of operation within 30 days of the last day of operation as to final disposition of patient records and charts;

notification of patients of discontinuation of service, including arrangements to transfer active patient's records, radiographs, or copies to succeeding practitioners or to the patient upon written request.

New Jersey

Reference: Board minutes, October 7, 2015

There are no current regulations to address this inquiry, other than that dentists are expected to perform their services according to the standard of care, including sterilization of equipment, record-keeping, and so on. The board referred this matter to a committee for discussion and to make recommendations to the board for any potential regulatory initiatives.

New Mexico

Reference: New Mexico Board of Dental Health Care Practice Statutes, Rules and Regulations

Definitions:

- **Mobile Dental Facility:** A facility in which dentistry is practiced and that is routinely towed, moved, or transported from one location to another
- **Portable Dental Unit:** A nonfacility in which dental equipment used in the practice of dentistry is transported to and used on a temporary basis at an out-of-office location

Record-keeping: Dentists and dental hygienists who perform services in mobile dental facilities or use portable dental units shall maintain all records, either paper or electronic, in a secure form or location and provide to the board, upon request, all treatment records and locations of treatment.

Referrals: Dentists and dental hygienists who perform services in mobile dental facilities or use portable dental units shall have agreements in place with New Mexico licensed dentists for any immediate follow-up care.

Standards of Operation and Practice: Dentists and dental hygienists who perform services in mobile dental facilities or use portable dental units shall display a copy of their license and registration within or directly outside the mobile dental facility or areas in which portable dental units are utilized. Exceptions: occasional services provided to a patient of record of a fixed dental office who is treated outside of the dental office; services publicly funded and provided solely as a public health measure; services provided to a patient by an accredited dental or dental hygiene school; services by a dentist, physician, or certified

registered nurse anesthetist providing sedation in a dental office; and collaborative hygienists in compliance with rules established in 16.5.17 NMAC.

Information for Patients: Dentists and dental hygienists who perform services in mobile dental facilities or use portable dental units shall provide each patient, parent, or guardian with the name(s) of the dentist and/or hygienist providing treatment and contact information immediately after treatment.

Notifications: Dentists and dental hygienists who perform services in mobile dental facilities or use portable dental units shall provide to the board, upon request, the name, address, and contact information of the owner/operator of the mobile dental facility.

Ohio

References: 4715.36.G.18; Dental Practice Act

Definitions:

- **Mobile Dental Facility:** A mobile dental unit located at any facility listed in divisions (G)(1) to (17) of section 4715.36, defined as a health care facility, a state correctional institution, or a comprehensive child development program that receives funds distributed under the Head Start Act, 95 Stat. 499 (1981), 42 U.S.C. 9831, as amended, and is licensed as a child daycare center

Anesthesia:

(A) No dentist shall administer general anesthesia or deep sedation in the state of Ohio unless such dentist possesses a permit of authorization issued by the Ohio state dental board or has made application for such permit and, based on a credentials review, is notified that a formal evaluation is pending. The dentist holding such permit shall be subject to review, and such permit must be renewed biennially.

(B) In order to receive such permit, the dentist must apply on a prescribed application form to the Ohio state dental board, submit the application fee, and produce evidence showing that he or she:

- Has a properly equipped facility or facilities, whether fixed, mobile, or portable, for the administration of general anesthesia or deep sedation in which the permit holder agrees to have available and utilize adequate monitoring, personnel, emergency equipment, and drugs as recommended in the Guidelines for the Use of Sedation and General Anesthesia by Dentists as adopted by the October 2007 American Dental Association House of Delegates and/or the American Association of Oral and Maxillofacial Surgeon's Office Anesthesia Evaluation Manual, 8th edition.

- At the time of application, maintains successful completion of an advanced cardiac life support course or its age-appropriate equivalent.
- Maintains a permanent address within the state of Ohio in which he or she conducts business pursuant to his or her Ohio dental license. Prior to the issuance of such permit, the Ohio state dental board shall require an onsite evaluation of the facility or facilities, equipment, personnel, anesthetic techniques, and related document(s) to determine if the aforementioned requirements have been met. This evaluation shall be conducted by a qualified consultant appointed by the Ohio state dental board and will follow the Guidelines for the Use of Sedation and General Anesthesia by Dentists as adopted by the October 2007 American Dental Association House of Delegates and/or the American Association of Oral and Maxillofacial Surgeon's Office Anesthesia Evaluation Manual, 8th edition. In the case of a mobile or portable facility, one inspection of that facility shall be conducted in the office of an Ohio licensed dentist where deep sedation or general anesthesia is administered. A written list of all monitors, emergency equipment, and other materials, which the mobile anesthesia provider agrees to have available at all times while administering conscious sedation, deep sedation, and general anesthesia in multiple locations, shall be provided to the Ohio state dental board.

Pennsylvania

Reference: Pennsylvania Code Chapter 33. State Board of Dentistry.

Definitions:

- **Practice Sites:** A dental hygienist may engage in professional practice at the following sites under the supervision of a dentist: (1) in dental facilities; (2) in public or private institutions such as schools, hospitals, public health care agencies, nursing homes, mobile health units, and homes for juveniles, the elderly, and the handicapped; and (3) in institutions under the jurisdiction of federal, state, or local health agencies.

South Carolina

Reference: South Carolina Dental Board Regulations, Chapter 39-18

Definitions: This regulation applies to an organization or dental practice utilizing a licensed dentist or dental hygienist to operate a mobile dental facility or portable dental operation who provides dental or dental hygiene services and does not have a physically stationary office at the location at which the

services are provided. Federal, state, and local governmental agencies as well as FQHCs are exempt from the requirements of this regulation. Dentists licensed to practice in South Carolina who have not registered with the board to operate a mobile dental facility or a portable dental operation may provide dental services through the use of dental instruments, materials, and equipment taken out of a dental office without registering if the service is provided as emergency treatment for their patients of record.

As used in this regulation, unless the context indicates otherwise:

- **Mobile Dental Facility** means any self-contained facility in which dentistry or dental hygiene will be practiced, which may be moved, towed, or transported from one location to another
- **Portable Dental Operation** means dental equipment utilized in the practice of dentistry or dental hygiene that is transported to and utilized on a temporary basis at an out-of-office location, including but not limited to other dentists' offices, patients' homes, schools, nursing homes, or other institutions or locations
- **Operator** means the organization or dental practice engaged in providing dental or dental hygiene services directly or through persons authorized by law to provide the services
- **Organization or Dental Practice** means persons or entities that provide dental or dental hygiene services to others

Application/Permit/Registration: In order to operate a mobile dental facility or portable dental operation, the operator shall first register with the board. Each mobile dental facility or portable dental operation must be registered. Such registration may not be issued until the mobile dental facility or portable dental operation has passed an inspection as provided in this regulation. The applicant shall complete an application in the form and manner required by the board. The applicant shall pay the initial registration fee of \$150 at the time of application or as set by the board in accordance with Section 40-1-50. The applicant shall provide the board with evidence of compliance with the requirements of this regulation. The applicant shall submit proof of any applicable radiographic equipment inspection with the application for registration.

Equipment and Physical Requirements: An initial inspection of each mobile dental facility or portable dental operation shall be conducted by a representative of the department/board at a time and place to be designated by staff. Inspections may be scheduled throughout the year. Upon satisfactory inspection, the registrant will be issued a sticker, with the current year indicated, to be affixed to the mobile dental facility or portable dental operation in a place designated by the board. Mobile dental facilities shall be inspected annually upon renewal of registration. Portable dental operations shall be inspected upon initial registration. Thereafter, the registration may be renewed annually without inspection, unless there

has been a substantial repair, replacement, or modification made that requires inspection in the interest of patient safety before use on patients.

The operator shall ensure that the mobile dental facility or portable dental operation has ready access to a ramp or lift if services are provided to disabled persons; a properly functioning sterilization system; ready access to an adequate supply of potable water, including hot water; ready access to toilet facilities; and a covered galvanized, stainless steel, or other noncorrosive container for deposit of refuse and waste materials.

Informed Consent and Record-keeping: The operator of a mobile dental facility or portable dental operation shall ensure the following:

- There is a written procedure for emergency or follow-up care for patients treated in the mobile dental facility or portable dental operation and that such procedure includes prior arrangements for emergency or follow-up treatment in a medical or dental facility, as may be appropriate, that is located in the area in which services are being provided
- The mobile dental facility has communication devices to enable immediate contact with appropriate persons in the event of a medical or dental emergency. The communications devices must enable the patient or the parent or guardian of the patient treated to contact the operator for emergency care, follow-up care, or information about treatment received. The provider who renders follow-up care must also be able to contact the operator and receive treatment information, including radiographs
- The mobile dental facility complies with all applicable federal, state, and local laws, regulations, and ordinances dealing with radiographic equipment, flammability, construction, sanitation, zoning, infectious waste management, universal precautions, OSHA guidelines, access by persons with disabilities as required by state and federal law, and federal CDC guidelines, and the applicant possesses all applicable county and city licenses or permits, including business licenses, to operate the unit at the location at which services are being provided
- The mobile dental facility has carbon monoxide detection devices installed and in proper working order
- No services are performed on minors without a signed consent form from the parent or guardian
- During or at the conclusion of each patient's visit to the mobile dental facility or portable dental operation, the patient, or patient's parent or guardian if the patient is a minor, is provided with an information sheet and, if the patient has provided consent to an institutional

facility to assist in the patient's dental health records, the institution is provided with a copy of the information sheet. An "institutional facility" includes, but is not limited to, a long-term care facility or school, and the information sheet must include pertinent contact information as provided by this section; the name of the dentist and other dental staff who provided services and their license numbers, if applicable; a description of the treatment rendered, including billed service codes and, in the instance of fee-for-service patients, fees associated with treatment and tooth numbers when appropriate; a description of any dental needs either observed during a hygienist's screening or diagnosed during a dentist's evaluation; and a recommendation that the patient see another dentist if the mobile dental facility or the portable dental operation is unable to provide the follow-up treatment described above

Referrals: A mobile dental facility that accepts a patient and provides preventive treatment, including prophylaxis, radiographs, and fluoride, but does not follow-up with treatment or follow-up on referral for treatment when such treatment is clearly indicated, is considered to be abandoning the patient. Appropriate and accessible (within the patient's geographic area) arrangements must be made for treatment services on a follow-up basis. Reasonable attempts to have follow-up treatment in an instance in which a patient does not reappear for treatment or does not meet a scheduled appointment is not abandonment.

Renewal: The registration of mobile dental facilities and portable dental operations shall be renewed in accordance with a schedule set by the Department of Labor, Licensing and Regulation and the forms approved by the board on the dates in the form and in the manner provided by the board. The registrant shall pay the registration renewal fee in an amount set by the Department of Labor, Licensing and Regulation.

Standards of Operation and Practice: The operator shall identify and advise the board in writing within 30 days of any personnel change relative to all licensed dentists and licensed dental hygienists associated with the mobile dental facility or portable dental operation by providing the full name(s), address(es), telephone number(s), and license number(s) where applicable. The operator shall advise the board in writing within 30 days of any change in the written procedure for emergency follow-up care for patients treated in the mobile dental facility, including arrangements for treatment in a dental facility that is permanently established in the area. The permanent dental facility shall be identified in the written procedure. Each dentist and dental hygienist providing dental services in the mobile dental facility or portable dental operation shall prominently display his or her authorization to practice in this state in plain view of patients.

Each operator of a mobile dental facility or portable dental operation shall maintain a confidential written or electronic record for each location at which services are provided, including the street address

of the service location, the dates and times of each session, the number of patients served, and the types of dental services provided to each patient by name and quantity of each service provided. The confidential written or electronic record shall be made available to the board within 10 days of a request by the board. Costs for such records shall be borne by the mobile dental facility or portable dental operation.

A mobile dental facility or portable dental operation shall at all times be in the charge of a dentist licensed to practice dentistry in this state, who is responsible for services provided at the mobile dental facility or portable dental operation.

Information for Patients: During or at the conclusion of each patient's visit to the mobile dental facility or portable dental operation, the patient shall be provided with an information sheet. If the patient has provided consent to an institutional facility to access the patient's dental health records, the institution shall also be provided with a copy of the information sheet. An "institutional facility" includes, but is not limited to, a long-term care facility or school. An information sheet shall include pertinent contact information as required by this regulation; the name of the dentist and other dental staff who provided services and their license numbers, if applicable; a description of the treatment rendered, including billed service codes and, in the instance of fee-for-service patients, fees associated with treatment, in addition to tooth numbers when appropriate; a description of any dental needs either observed during a dental hygienist's screening or diagnosed during a dentist's evaluation; and, if necessary, referral information to another dentist.

Notifications: The operator of a mobile dental facility or portable dental operation shall maintain an official business address of record, which shall not be a post office box and which shall be filed with the board. A mailing address, if different from the business address and used on an official basis, shall be provided as well. The operator of a mobile dental facility or portable dental operation shall maintain an official telephone number of record, which shall be filed with the board. The board shall be notified within 30 days of any change in the address or telephone number of record. All written or printed documents available from or issued by the mobile dental facility or portable dental operation shall contain an official address and telephone number of record for the mobile dental facility or portable dental operation. All dental and official records shall be maintained and available for inspection and copying upon request by the representatives of the board.

Prohibited: The operator of a mobile dental facility or portable dental operation is prohibited from hiring, employing, allowing to be employed, or permitting to work in or about a mobile dental facility or portable dental operation any person who performs or practices any occupation or profession regulated under Title 40 who is not duly authorized in accordance with state law.

Termination of Services: Upon cessation of operation by the mobile dental facility or portable dental operation, the operator shall notify the board within 30 days of the last day of operations in writing of the final disposition of patient records and charts. If the mobile dental facility or portable dental operation is sold, a new registration application must be filed with the board. Upon choosing to discontinue practice or services in a community, the operator of a mobile dental facility or portable dental operation shall notify all of the operator's active patients in writing, or by publication once a week for 3 consecutive weeks in a newspaper of general circulation in the community, that the operator intends to discontinue the mobile dental facility's or portable dental operation's practice in the community; and encourage the patients to seek the services of another dentist. The operator shall make reasonable arrangements with the active patients of the mobile dental facility or portable dental operation for the transfer of the patient's records, including radiographs or copies thereof, to the succeeding practitioner or, at the written request of the patient, to the patient. As used in this section, "active patient" applies and refers to a person whom the mobile dental facility or portable dental operation has examined, treated, cared for, or otherwise consulted with during the 2-year period prior to discontinuation of practice, or moving from or leaving the community.

South Dakota

Reference: South Dakota Legislative Statutes

Application/Permit/Registration: 20:43:04:07. Mobile office or unit—Authority to operate. Authorization to operate a mobile dental office or unit shall be secured from the Board of Dentistry.

Exemptions/Exceptions/Exclusions: 36-6A-33. Persons excluded from unauthorized practice or prohibited services provisions. The provisions of §§ 36-6A-30 and 36-6A-31 do not apply to the practice of dentistry provided by any mobile or portable dental unit operated by any nonprofit organization affiliated with a nonprofit dental service corporation organized pursuant to Chapter 58-39.

Tennessee

Reference: Tennessee Board of Dentistry Rules

Definitions:

- **Mobile Dental Clinic:** Any self-contained clinic or unit which may be moved, towed, transported, or utilized on a permanent or temporary basis to an out-of-office location in which dentistry is practiced. The out-of-office location may include, but is not limited to, schools, nursing homes, and other institutions

Application/Permit/Registration: Mobile dental clinics shall be operated/owned only by a dentist licensed in Tennessee, an official agency of the state government or any subdivision thereof, any nonprofit organization, or any hospital. Dental hygienists and dental assistants shall not operate/own a mobile dental clinic. Must obtain all applicable county and city licenses or permits to operate the facility.

Driver: The driver of the mobile dental clinic must possess a valid operator's license appropriate for the type vehicle being driven, not have any violations related to the operation of a motor vehicle in the last 3 years, and not have any violations involving alcohol or illegal substances related to the operation of a motor vehicle in the last 10 years.

Equipment and Physical Requirements: Must comply with all applicable federal, state, and local laws, regulations, and ordinances regarding infection control and sanitation procedures, including providing access to a ramp or lift if services are provided to disabled persons; having access to a properly functioning sterilization system; having access to an adequate supply of potable water, including hot water; and having access to toilet facilities.

Additionally, the mobile clinic must have a covered galvanized, stainless steel, or other noncorrosive metal container for deposit of refuse and waste materials; a dental treatment chair; a dental treatment light; a radiographic unit with appropriate processing equipment; a portable delivery system or an integrated system; an evacuation unit suitable for dental surgical use; equipment to treat medical emergencies; and appropriate and sufficient dental instruments and infection control supplies.

Exemptions/Exceptions/Exclusions: School-based prevention programs whose mobile dental clinics provide only dental screenings, oral health education, oral evaluations, topical fluoride, and sealant application are not required to have a radiographic unit, an evacuation unit for surgical use, or equipment to treat medical emergencies.

Dental hygienists may perform delegable procedures for patients of record of their employer dentist who reside in nursing homes pursuant to Rule 0460-03-.09. When treating a nursing home patient, the dentist must comply with Rule 0460-01-.15.

Informed Consent: All mobile dental clinics must maintain all dental records as provided in Rule 0460-02-.12, observe all patient rights as provided in Rule 0460-01-.16, and obtain written informed consent when treating a minor.

Standards of Operation and Practice: Must comply with all applicable federal, state, and local laws, regulations, and ordinances regulating radiographic equipment, flammability, construction, and zoning. All dental hygienists and dental assistants assisting the dentist must be currently licensed and registered with the Tennessee Board of Dentistry.

Texas

Reference: Texas State Board of Dental Examiners

Application/Permit/Registration: Operators of mobile dental facilities and portable dental units operated in Texas must hold a permit issued by the TSBDE. Application, copies of all required supporting documentation, and fee must be mailed to the TSBDE. The Mobile Dental Facility/Portable Dental Unit Renewal Form requires a signature attesting to compliance with the Dental Practice Act and rules and regulations of TSBDE regarding operation of a mobile facility or portable unit in Texas.

Equipment and Physical Requirements: Before any session at any location, operator must arrange for access to a properly functioning sterilization system, ready access to an adequate supply of potable water, and ready access to toilet facilities.

Exemptions/Exceptions/Exclusions: Licensees providing emergency treatment; or when patient of record of the licensee or organization is treated outside the dental office; or when treatment is provided without charge to patients or any third-party payer, so long as treatment is not provided regularly; or when service is provided in the office of another licensed dentist.

Record-keeping: Assumed necessary to comply with annual reporting compliance requirement. Renewal: Annual renewal may be completed within 45 days of expiration date and at least by December 31. Annual renewal fee is \$60.

Standards of Operation and Practice: Prominent display of all dental and dental hygienist licenses and current registration certificates; mobile and portable dental permits or copies.

Annual report filed with TSBDE on September 10 of each year for preceding year ending August 31, detailing the location, including a street address; date(s) of each session; number of patients served; types of dental procedures; and quantity of each service provided. Annual report does not need to include information concerning dental services provided to less than 3 individuals at a private residence.

Notifications: Personnel changes within 30 days of any change, in writing.

Utah

Reference: Utah Dental Practice Act

Definitions:

- **Public Health Setting:** An individual's residence, if the individual is unable to leave the residence; a school, as part of a school-based program; a nursing home; an assisted living or long-term care facility; a community health center; an FQHC; or a mobile dental health program that employs a dentist who is licensed under this chapter.

Note: No other regulatory guidance on mobile dentistry is provided.

Virginia

Reference: Title 18. Professional and Occupational Licensing, Board of Dentistry, Chapter 20 Regulations: 18VAC60-20-332 (Part VIII), 18VAC60-20-342, 18VAC60-20-352.

Note: These regulations are among the briefest reviewed—less than 2 pages with an application that requires certification from operator.

Definitions:

- **Mobile Dental Facility:** A self-contained unit in which dentistry is practiced that is not confined to a single building and that can be transported from one location to another
- **Portable Dental Operation:** A nonfacility in which dental equipment used in the practice of dentistry is transported to and utilized on a temporary basis at an out-of-office location, including patients' homes, schools, nursing homes, or other institutions

Application/Permit/Registration: A completed application for registration of either a mobile dental facility or portable dental operation is required. Initial fee is \$250 and annual renewal fee is \$150, due by December 31. The registration application requires the official address of record (not a post office box) and the name, address, and license number of each dentist and dental hygienist or dental assistant II who will be providing services. Address or location of each place where the mobile dental facility or portable dental operation will provide dental services and the dates on which such services will be provided are required. Additional locations or dates must be provided in writing to the board prior to provision of services. Information in the application must be made available to the public. Registration may be denied

to applicants who violate the provisions of the Code of Virginia that constitute cause for revocation, suspension, or denial of license (eg, felony conviction, negligence in provision of treatment).

Equipment and Physical Requirements: Communication facilities, water supply, and all equipment necessary to provide the dental services to be rendered.

Exemptions/Exclusions: All federal, state, and local governmental agencies and any treatment provided without charge to patients or any third-party payer. Code of Virginia also specifies that exemption from registration applies to FQHCs with a dental component that provides dental services via mobile model to adults and children within 30 miles of the FQHC and to mobile dental clinics operated by free health clinics or health safety net clinics that have tax-exempt status under §501(c)(3) of the Internal Revenue Code and operate within 30 miles of the clinic. Exemption is also granted to mobile dental clinics that provide services to individuals who are not ambulatory and who reside in long-term care facilities, assisted living facilities, adult care homes, or private homes.

Informed Consent: Written consent is required from the patient or, if the patient is a minor or incapable of consent, his parent, guardian, or authorized representative.

Record-keeping: Patient records are to be maintained in a secure manner within the facility or address of record on the registration application. Records are to be made available upon request by the patient, parent, guardian, or authorized representative and shall be made available to the board for inspection and copying.

Referrals: Certification that there is a written agreement for follow-up care for patients is required and must include identification of and arrangements for treatment in a dental office that is permanently established within a reasonable geographic area.

Standards of Operation and Practice: Written agreement for follow-up care for patients for treatment in a dental office permanently established within a reasonable geographic area.

Information for Patients: Required for each patient and must include patient name, date of service, and location at which treatment was provided as well as name of dentist or dental hygienist who provided services, description of treatment rendered, and tooth numbers when appropriate. Billed service codes and fees associated with treatment as well as any additional dental needs observed must be provided along with referral or recommendation to another dentist if the operation cannot provide the follow-up treatment. Emergency contact information required. Information shall be shared with institutions that have been given written consent to have access to the patient's dental health record.

Notifications: Change of address of record for the facility or operation within 30 days as well as change in ownership or address of record.

West Virginia

Reference: W. Va. Code §30-4-6. 1.3.

Definitions:

- **Board:** West Virginia Board of Dentistry
- **Dental Home:** A licensed primary dental care provider who has an ongoing relationship with a patient where comprehensive oral health care is continuously accessible, coordinated, family centered, and provided in compliance with the policies of the American Dental Association
- **Mobile Dental Facility:** Any self-contained facility in which dentistry or dental hygiene will be practiced that may be moved, towed, or transported from one location to another
- **Operator:** A licensed dentist or an organization authorized by the Dental Practice Act to employ or contract with licensed dentists to whom the permit is issued as provided by this rule
- **Permit:** An authorization granted by the board to operate a mobile dental facility or use a portable dental unit in the State of West Virginia
- **Portable Dental Unit:** Any nonfacility in which dental equipment, utilized in the practice of dentistry, is transported to and utilized on a temporary basis at an out-of-office location, including but not limited to patients' homes, schools, nursing homes, or other institutions
- **Session:** A period of time during which personnel associated with a permitted facility or unit are available to provide dental services at a location

Application/Permit: In order to operate a mobile dental facility or portable dental unit, an operator shall first obtain a permit issued by the board. Before an operator operates a mobile dental facility or portable dental unit, the board shall issue a permit to an operator to operate a mobile dental facility or portable dental unit. An application for a mobile dental facility or portable dental unit shall be submitted to the board along with the appropriate fee as set forth by the board's fee schedule (5C SR3). Before issuing a permit to operate a mobile dental facility or portable dental unit, the board shall determine that an

operator meets all qualifications under this rule. The initial application for a mobile dental facility or portable dental unit permit shall include:

- The full name, an address of record that is not a post office box, and telephone number of each dentist, dental hygienist, or operator who will operate a mobile dental facility or use a portable dental unit
- Proof of insurance from a licensed insurance carrier that the operator has in force at least \$1 million/\$3 million of general liability insurance, malpractice insurance, or bond or the federal/state nonprofit equivalency. An operator shall maintain the insurance coverage at all times during which the operator holds a permit issued by the board to operate a mobile dental facility or portable dental unit
- The physical address, mailing address, and official telephone number of record of the operator
- A copy of a written agreement for the emergency follow-up care of patients treated in the mobile dental facility or portable dental unit; such agreement must include identification of and arrangements for treatment in a dental office that is permanently established within a reasonable geographic area
- A statement that the mobile dental facility or portable dental unit has access to communication facilities which will enable dental personnel to contact assistance as needed in the event of an emergency
- A statement that all applicable federal, state, and local laws, regulations, and ordinances dealing with radiographic equipment, storage and use of flammable materials, and acceptable sanitation and zoning standards, along with facility construction standards, including required or suitable access for disabled individuals, have been complied with
- A statement that the applicant possesses all applicable county and city licenses or permits to operate the mobile dental facility or portable dental unit
- A copy of a written policy concerning infection control procedures and how instruments are to be sterilized and transported, which must comply with the CDC's recommendations for infection control practices for dentistry

All permits to operate a mobile dental facility or portable dental unit shall expire September 1 each year, or on the date when the permit holder is no longer associated with the facility or unit, whichever occurs first. Upon cessation of operations by the mobile dental facility or portable dental unit, the permit holder shall notify the board of the final disposition of patient records and charts. A permit to operate a mobile dental facility or portable dental unit is not transferrable.

Permit to be renewed annually; annual report to be filed. On or before September 1 of each year, operators holding a permit to operate mobile dental facility or portable dental unit shall submit a renewal application along with a renewal fee as set forth by the board's fee schedule (5C SR3). The board, at its discretion, may alter or eliminate the required fee based on a demonstration of hardship by the applicant. An annual report shall be filed with the board at the time of renewal each year. The annual report shall consist of a written report for the preceding year ending June 30 that details the location (including a street address) and date(s) of each session, number of patients served, types of dental procedures performed, and quantity of each service provided.

Equipment and Physical Requirements: A mobile dental facility must include a dental treatment chair; a dental treatment light; when radiographs are to be made by the mobile dental facility, a radiographic unit that is properly monitored by the proper authorized agency of the State of West Virginia in addition to a lead apron with a thyroid collar; a portable delivery system, or an integrated system if used in a mobile dental facility; an evacuation unit suitable for the procedure being performed; a list of appropriate and sufficient dental instruments, including explorers and mouth mirrors, and infection control supplies, such as gloves, face masks, and so forth that are on hand; ready access by a ramp or lift; a covered, noncorrosive container for deposit of waste materials, including biohazardous materials; an automated external defibrillator if Class 2, 3, or 4 anesthesia is used in the mobile dental facility; smoke and carbon monoxide detectors; access to a properly functioning sterilization system; ready access to an adequate supply of potable water; and ready access to toilet facilities.

A portable dental unit must include a dental treatment chair; a dental treatment light; when radiographs are to be made by the portable dental unit, a radiographic unit that is properly monitored by the proper authorized agency of the State of West Virginia in addition to a lead apron with a thyroid collar; a portable delivery system; an evacuation unit suitable for the procedure being performed; a list of appropriate and sufficient dental instruments, including explorers and mouth mirrors, and infection control supplies, such as gloves, face masks, and so forth that are on hand; a covered, noncorrosive container for deposit of waste materials, including biohazardous materials; and an automated external defibrillator if Class 2, 3, or 4 anesthesia is used with the portable dental unit.

Informed Consent: A licensee providing dental care at a mobile dental facility or through a portable dental unit shall not perform services on a minor or an incapacitated person without the signed informed consent of a parent or guardian. The informed consent form must be obtained prior to any dental service in a mobile dental facility or through a portable dental unit and is required for the initial visit for diagnostic and preventative services. Consent for subsequent treatment may be written or verbal, provided that the verbal consent is documented in the patient record. The informed consent form shall include, at a minimum, the following information:

- Name of the operator of the mobile dental facility or portable dental unit

- Permanent office address of the mobile dental facility or portable dental unit that is not a post office box
- Telephone number and/or other emergency contact number where calls will be returned within 24 hours of being received
- Services to be provided
- Whether the prospective minor or incapacitated patient received dental care from a licensed dentist during the previous 12 months
 - Provided that if the dental care was received from a mobile dental facility or through a portable dental unit, the name, address, and telephone number of the mobile dental facility or portable dental unit's dental home shall be documented
 - Provided further that the licensee shall contact such dental home to notify the dental home of the minor or incapacitated person's interest in receiving dental care at the mobile dental facility or through the portable dental unit. If the dental home confirms that an appointment for the minor or incapacitated individual is scheduled with the dental home, the licensee shall encourage the parent or guardian of the minor or incapacitated individual to seek care from the dental home
- The informed consent form must be signed by the parent or legal guardian of the minor or incapacitated individual and shall document that the parent or legal guardian understands that the prospective patient may choose at any time to receive care from his or her dental home rather than from the mobile dental facility or portable dental unit

A licensee providing dental care at a mobile dental facility or through a portable dental unit shall not perform services on an adult without first obtaining a signed informed consent form from the prospective patient. The informed consent form shall document that the prospective patient understands that he or she may choose at any time to receive care from his or her dental home rather than at the mobile dental facility or through the portable dental unit, that the patient has elected to receive care at the mobile dental facility or through the portable dental unit, and that the mobile dental facility or portable dental unit is now the prospective patient's dental home and will be responsible for postoperative complications and general dental care. Each person receiving dental care in a mobile dental facility or through a portable dental unit shall receive a copy of the informed consent form and an information sheet at the end of the visit. The information sheet provided to the patient after dental care is rendered at a mobile dental facility or through a portable dental unit shall contain:

- Name of the licensee(s) who provided service

- Telephone number and/or other emergency contact number where calls will be returned within 24 hours of being received
- List of treatment rendered, including, when applicable, billing codes, fees, and tooth numbers
- Description of treatment that is needed or recommended
- Referrals to specialists or other dentists if mobile facility or portable dental unit is unable to provide the necessary treatment
- Consent form or a documented, verbal consent for additional treatment or altered treatment plan, when applicable

Record-keeping: Maintain, in full compliance with all record-keeping requirements contained in these rules, all dental records and official records at the official address of record for the facility or unit.

Standards of Operation and Practice: A permit holder is required to operate a permitted mobile dental facility or portable dental unit in compliance with all state laws and regulations.

Prominently display all dental and dental hygienist licenses and/or current renewal certificates, mobile dental facility permit or portable dental unit permit, or duplicates thereof.

All written or printed materials available from or issued by the mobile dental facility or portable dental unit must contain the official address and phone number of record for the facility or unit. A mobile dental facility or portable dental unit may operate only when all requirements described in these rules are being met.

Information for Patients: The operator shall take all necessary action to ensure that the patient records are available to the patient, a representative of the patient, or a subsequent treating dentist.

Follow-up: Any operator of a mobile dental facility or portable dental unit, or any licensee providing dental care at a mobile dental facility or through a portable dental unit, that accepts or treats a patient but does not refer patients for follow-up care when such follow-up care is clearly necessary, shall be considered to have abandoned the patient, which will subject the operator, licensee, or both to disciplinary action by the board.

Inspection Requirements: The board may inspect a mobile dental facility or portable dental unit prior to issuance of a permit or any time the board deems necessary for protection of the public.

Notifications: All permit holders shall notify the board in writing within 30 days of a change of address, whether a physical or mailing address; and shall notify the board in writing of a change in personnel listed as required by this rule within 30 days.

If a mobile dental facility or portable dental unit is sold, the current permit operator shall inform the board by certified mail within 10 days after the date of the sale is final. An operator of a mobile dental facility or portable dental unit shall notify the board at least 30 days before cessation of operations. Notification shall include, without limitation, the final day of operation of the mobile dental facility or portable dental unit and a description of the manner and procedure by which patients may obtain their records or transfer the records to another dentists. A copy of the notification shall be sent to all patients.

Wisconsin

Reference: 2013 Wisconsin Act 244 [2013 Senate Bill 573]

Definitions:

- **Mobile Dentistry Program:** A program providing dental hygiene as defined by s. 447.01 (3), Stats., or dentistry as defined by s. 447.01 (8), Stats., excluding a health practitioner practicing within the scope of a license not governed by Chapter 447, Stats., in one of the following:
 - Using portable equipment or supplies that are transported to any location that is not an intact dental or hospital facility
 - In a self-contained, intact facility that can be moved
- **Mobile Dentistry Program Registrant:** A person registered under s. 447.058, Stats.

Application/Permit: No person may own or operate a mobile dentistry program in this state unless the person is registered under this section. A person who wishes to own or operate more than one mobile dentistry program in this state shall apply for a separate registration under this section for each mobile dentistry program the person owns or operates.

The examining board may grant a registration under this section to a person who does all of the following:

- Submits an application for registration to the department on a form provided by the department. The application shall include the person's name and tax identification number, the person's business address and telephone number, and any other information the department or the examining board requires
- Pays the fee specified in s. 440.05 (1)

- Submits a list of all employees, contractors, or volunteers who are providing dental or dental hygiene care in Wisconsin. The list shall include the Wisconsin license number for each person providing dental or dental hygiene care

Exemptions/Exceptions/Exclusions: A program providing dental or dental hygiene care is not required to register if one of the following requirements is satisfied:

- The dental or dental hygiene care is provided within a 50-mile radius of the main or satellite facility and all of the following apply:
 - The care is billed by the main or satellite dental facility
 - The dentist or dental hygienist provides any necessary follow-up care to the patient
- The dental or dental hygiene care is being provided to a new or established patient of record of the main or satellite dental facility, and no more than 2 patients per day are being treated using portable equipment or a self-contained, intact facility that can be moved
- Department of Health Services screening assessments conducted as part of the Wisconsin Oral Health surveillance program

Referrals: There shall be a written protocol, for patients treated in the mobile dental program, for follow-up care in a dental facility that is permanently established within a 60-mile radius of where services were provided. There shall be an agreement with at least one provider for emergency treatment.

Renewal: A mobile dentistry program registrant shall submit an application for renewal, along with the applicable renewal fee determined by the department under s. 440.03 (9) (a), to the department on a form provided by the department on or before the applicable renewal date specified under s. 440.08 (2) (a). A mobile dentistry program registration must be renewed by October 1 of each odd-numbered year.

Information for Patients/Record-keeping: The mobile dentistry program registrant shall provide each patient with the name and contact information of the mobile dentistry program and mobile dentistry program's registration number providing services. At the time of providing services, each patient shall be given a written description of the dental services provided for that patient, any provider's name and license number, and the findings and recommendations.

Notifications: The mobile dentistry program shall notify the department within 30 days of new employees, contractors, or volunteers providing dental or dental hygiene services in Wisconsin.

REGULATORY REFERENCE LINKS (As of August 2017)

Alabama

Reference: Dental Practice Act, §34-9-6.1

Available from: <http://www.dentalboard.org/>

Arizona

Reference: Title 32 (Dental Practice Act), Article 8, §32-1299.21

Available from: <https://dentalboard.az.gov/statutes-rules>

Arkansas

Reference: Dental Practice Act, Subchapter 6

Available from: <http://www.asbde.org/>

California

Reference: Section 1049, 16 CA ADC; Mobile Dental Clinic Permits Regulations—Business and Professions Code, Sections 1657, 1658.8; Health and Safety Code, Section 1765.105, 1765.130

Available from: http://www.dbc.ca.gov/licensees/permits_mdc.shtml

Connecticut

Available from: <http://www.csda.com/docs/default-source/regulations/mobile-dental-providers.pdf?sfvrsn=4>

Illinois

Reference: 225 ILCS 25/50 (from Chapter 111, paragraph 2350, 225 ILCS 25/54.2)

Available from: <http://ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1296&ChapterID=24&Print=True>

Indiana

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