Innovation in the Oral Health Service Delivery System

Presented by:

Simona Surdu, MD, PhD

Oral Health Workforce Research Center
Center for Health Workforce Studies
School of Public Health, University at Albany, SUNY

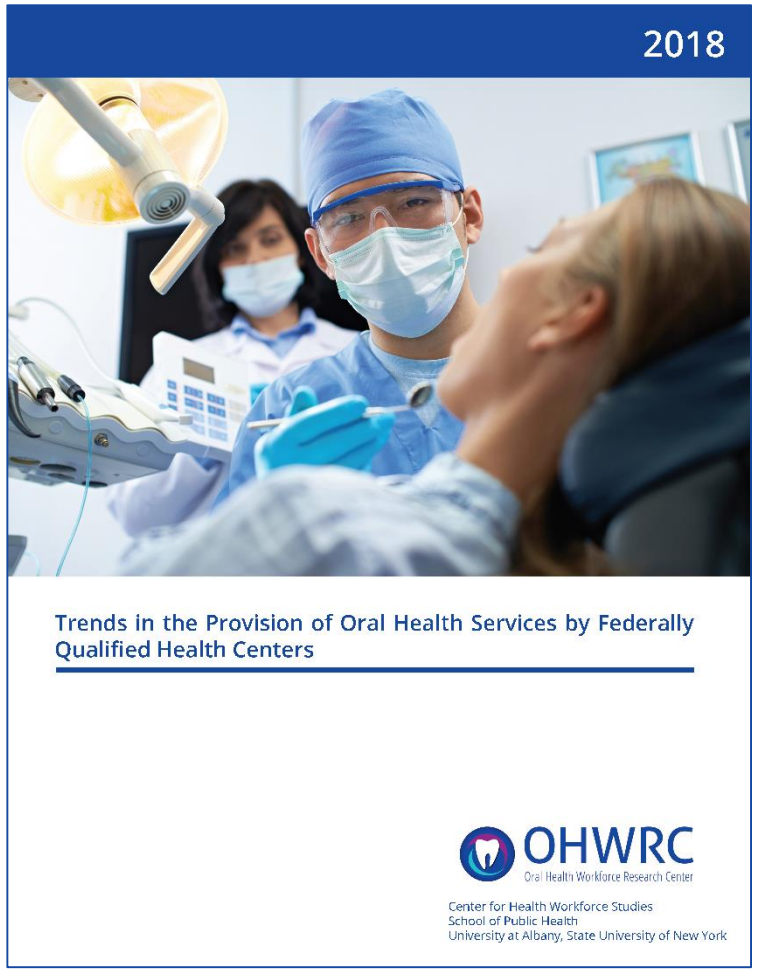
National Oral Health Conference
Louisville, Kentucky
April 16-18, 2018

OHWRC
Oral Health Workforce Research Center

Overview

- Innovation in the delivery system is driven by local need, creative use of resources, and engagement with available workforce. A few examples:
  - A study of Federally Qualified Health Centers (FQHCs) using HRSA's Uniform Data System (UDS) data
    - Trends in the Provision of Oral Health Services by FQHCs: Identification of Contributing Factors
  - A study of children using teledentistry services at Finger Lakes Community Health Center, NY
    - Outcomes from a Teledentistry Intervention for Children in a Federally Qualified Health Center
  - Case studies of Mobile and Portable Dentistry programs
    - An Assessment of the Contributions of Mobile and Portable Dentistry Programs to Improve Population Oral Health

A study of Federally Qualified Health Centers (FQHCs) using Uniform Data System (UDS) data:



Trends in the Provision of Oral Health Services by FQHCs: Identification of Contributing Factors

OHWRC
Oral Health Workforce Research Center

Study Background

- Access to oral health services in the safety net, especially FQHCs has expanded in recent years
- FQHCs required to provide all pediatric dental services mandated in the *Early and Periodic Screening, Diagnostic, and Treatment (EPSDT)* benefit and preventive dental care for adults either through direct or referral services
- Between 2001 and 2015, HRSA invested $55 million in oral health expansion grants
- In 2016, HRSA provided an additional $156 million for expansion of oral health infrastructure in FQHCs

Objectives

- Summarize trends in the direct provision of oral health services by FQHCs in recent years
- Analyze oral health service capacity in FQHCs and differences among health centers and across regions
- Determine factors that predict the likelihood of an FQHC providing direct general and/or specialty oral health services

Methods

- FQHC-level data:
  - Health Center Grantee Data in HRSA's Uniform Data System (UDS) from 2011 to 2014
    - Demographic and socioeconomic characteristics of patients
    - Full-time equivalent (FTE) by provider type
    - Type and amount of services provided
  - Data collected by the OHWRC through a survey of FQHCs
    - Number of dental operatories, 2014
- State-level data:
  - Medicaid coverage of dental benefits for adults, 2011-2014
  - Information on the scope-of-practice for dental hygienists (DHs) extracted from a study conducted by the OHWRC:
    - Numeric scale - DH Professional Practice Index (DHPPI), 2014

Proportion of patients receiving direct oral health services in FQHCs among all patients

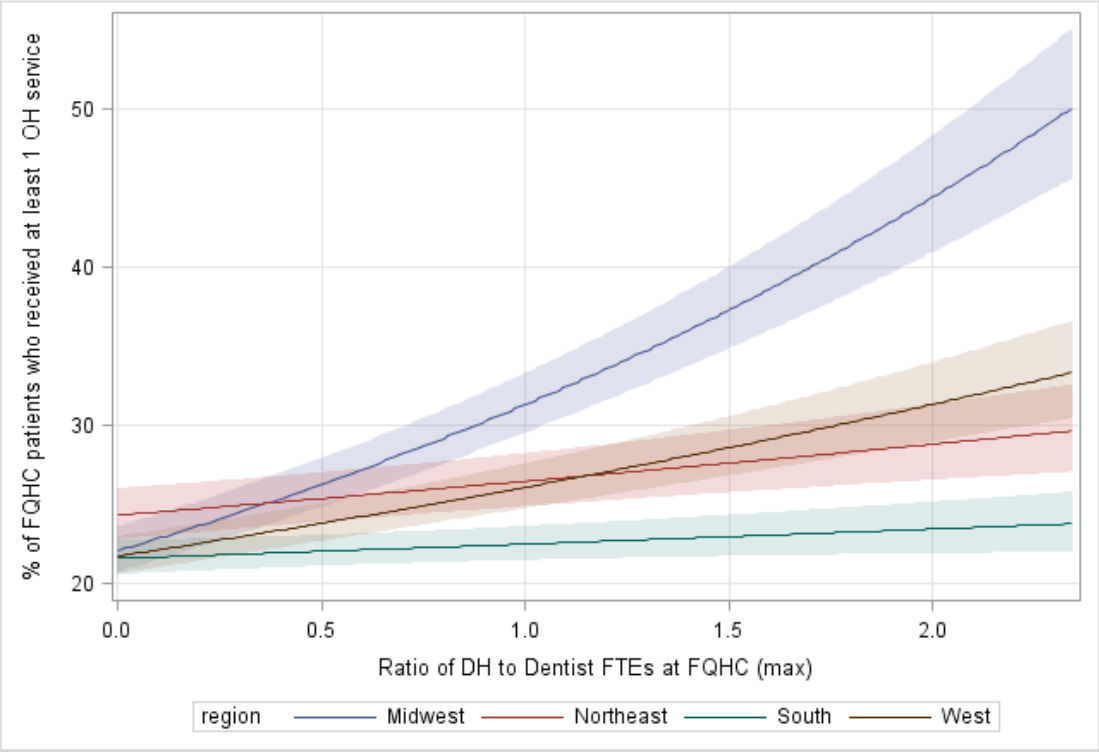
Table 1. Proportion of Patients Who Received Direct Oral Health Service at FQHCs by Region and Nationwide, 2011-2014

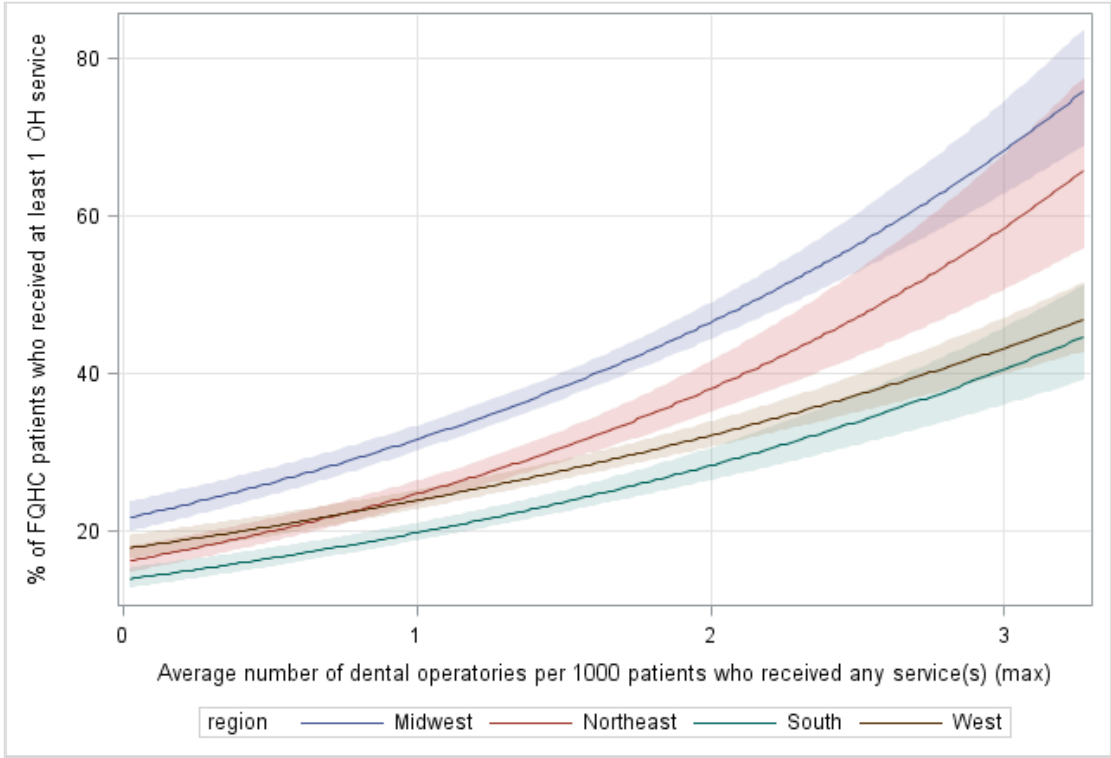
Region	2011	2012	2013	2014	% Change 2014-2011	Annual % Change	*P* Value for Trend
Midwest	25.5%	27.0%	33.3%	32.6%	27.5%	2.7%	.094
Northeast	23.0%	26.4%	28.6%	28.4%	23.5%	1.8%	.084
South	25.9%	25.7%	20.4%	20.5%	-21.1%	-2.2%	.097
West	24.8%	25.0%	24.6%	25.4%	2.7%	0.2%	.433
Nationwide	25.0%	25.9%	25.8%	25.9%	3.6%	0.3%	.200

OHWRC
Oral Health Workforce Research Center

Linear Regression Predictions of Patients Accessing Direct Oral Health Services at FQHCs by Region

Figure 1. Linear Regression Predictions for the Association Between Proportion of Patients Accessing Direct Oral Health Services and FQHC's Staffing Ratios & Capacity by Region, 2011-2014





OHWRC
Oral Health Workforce Research Center

Impact of state characteristics on patients' access to oral services

Table 2. Association Between FQHCs Provision of Direct Oral Health Care and State Characteristics Nationwide, 2011-2014

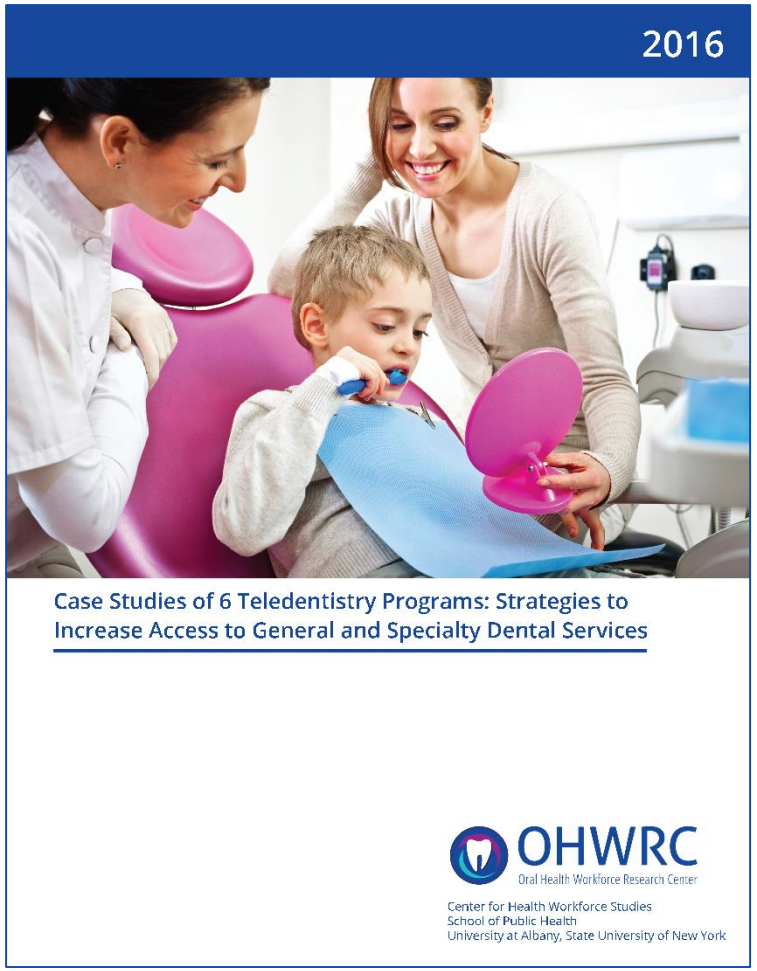
State Characteristics	Odds Ratio	95% Confidence Interval		*P* Value
		Lower Limit	Upper Limit	
FQHC's Revenue From Federal Grants ($100,000 unit)				
ACA Capital Development Grants	1.01	1.00	1.02	0.049
Medicaid coverage of dental benefits for adults, 2011-2014				
Emergency only versus none	1.70	1.24	2.32	<0.001
Limited versus none	1.40	1.02	1.92	0.036
Extensive versus none	1.72	1.25	2.38	0.001
Extensive versus limited	1.23	1.03	1.47	0.025
Dental Hygiene Professional Practice Index (DHPPI, 10-point unit), 2014	1.07	1.01	1.13	0.018

OHWRC
Oral Health Workforce Research Center

Conclusions

- FQHC patients in the Midwest, the Northeast, and the West are increasingly accessing oral health services; in contrast, there was a noticeable decline in the South
- The analyses suggest promising impacts of recent federal funding initiatives to increase the infrastructure and workforce capacity of FQHCs to provide oral health care
- The results suggest the need for policymakers and FQHCs to consider strategies & local workforce solutions that increase access to oral health services for underserved populations
- It will be important to continue to track changes in the dental service delivery to understand the effect of recent investments by the federal government in oral health grants

A study of children using teledentistry services at Finger Lakes Community Health Center, NY:



Outcomes from a Teledentistry Intervention for Children in a Federally Qualified Health Center

OHWRC
Oral Health Workforce Research Center

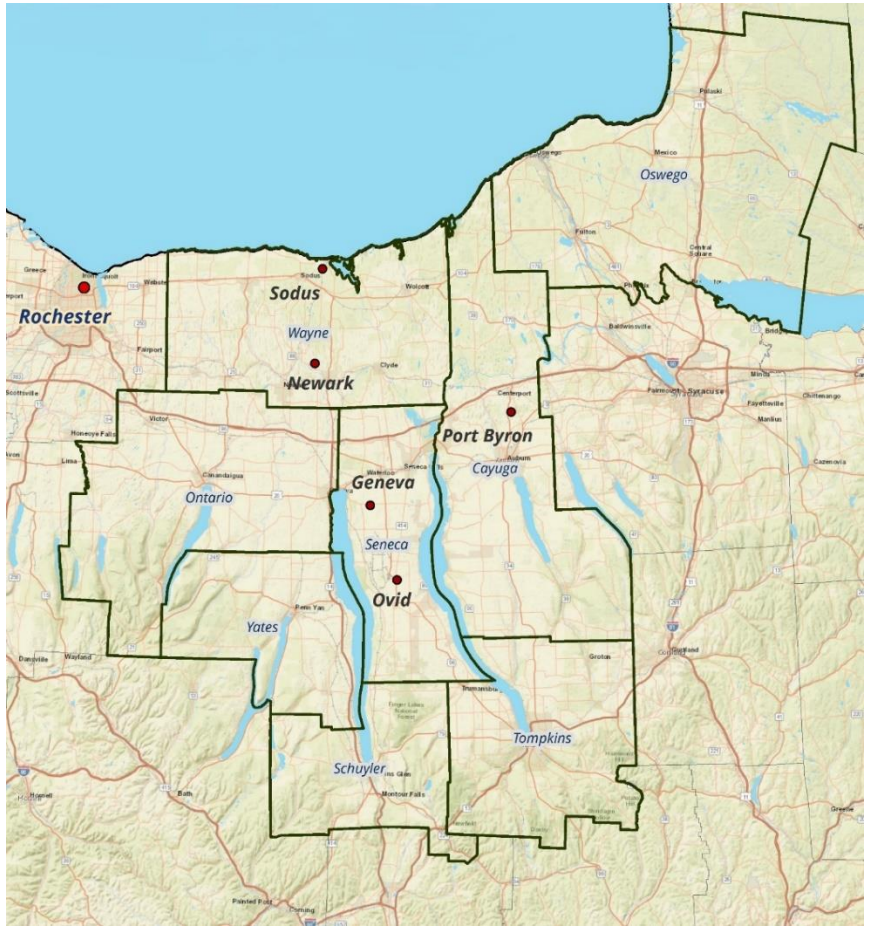
Study Background

- Access to oral health services is limited, especially for underserved populations who receive health care services through safety net providers
- Innovations in dental service delivery to enable access to general and specialty dental care, especially for rural and underserved populations, include the use of teledentistry
- Teledentistry is used for providing oral health screening, assessment, and examination, urgent care consultations, specialty care consults, follow-up examinations, and distance learning

Objectives

- Evaluate whether children who received a teledentistry consultation and treatment with a pediatric dental specialist accessed follow-up oral health services at general dentistry clinics
- Assess factors influencing utilization of follow-up oral health services in local general dentistry clinics among children subsequent to a teledentistry consultation and specialty dental treatment

Methods



Note: The counties bordered in black indicate the counties of residence of the children in the study.

Study location:

- Finger Lakes Community Health (FLCH), headquartered in Penn Yan, NY
- Provides telehealth and teledentistry services for mainly rural populations
- Co-located dental clinics and stand-alone dental centers providing general dentistry services
- Partnership with pediatric dental specialists at the Eastman Institute for Oral Health (EIOH) in Rochester, NY

Subjects & data collection:

- 144 children with serious dental decay who had a teledentistry specialty consultation in one of the FLCH dental clinics in 2015–2016
- FLCH dental records: demographics, case management services, follow-up visits

OHWRC
Oral Health Workforce Research Center

Characteristics of Study Subjects by Utilization of Follow-Up Oral Health Services at One of the Finger Lakes Community Health (FLCH) General Dentistry Clinics

Characteristics of study subjects	All children *(n=144)*		Utilization of follow-up oral health services at FLCH				*P*-value
			Yes *(n=111)*		No *(n=33)*		
	n	%	n	%	n	%	
Gender							0.164
Girls	74	51.4%	61	55.0%	13	39.4%	
Boys	70	48.6%	50	45.1%	20	60.6%	
Age (years)							0.214
Mean (range)	144	4.9 (2.0-10.0)	111	5.0 (2.0-10.0)	33	4.7 (2.0-9.0)	
Race							0.830
White	101	70.1%	77	69.4%	24	72.7%	
Other race	43	29.9%	34	30.6%	9	27.3%	
Ethnicity							0.441
Hispanic	26	18.1%	22	19.8%	4	12.1%	
Other ethnicity	118	81.9%	89	80.2%	29	87.9%	
Living situation							0.296
Lives in two-parent family	95	66.0%	76	68.5%	19	57.6%	
Lives with single parent, other	49	34.0%	35	31.5%	14	42.4%	
Behavioral or developmental disorder[a]							0.793
No	120	83.3%	93	83.8%	27	81.8%	
Yes	24	16.7%	18	16.2%	6	18.2%	

[a] Attention deficit/hyperactivity disorder, autism, speech delay, developmental delay, physical disability.

OHWRC
Oral Health Workforce Research Center

Teledentistry Consultation and Dental Treatment with a Pediatric Dental Specialist by Utilization of Follow-Up Oral Health Services at Finger Lakes Community Health (FLCH)

Teledentistry consultation and dental treatment covariates	All children *(n=144)*		Utilization of follow-up oral health services at FLCH				*P*-value
			Yes *(n=111)*		No *(n=33)*		
	n	%	n	%	n	%	
Travel distance to one of the FLCH general dentistry clinics (miles)							0.171
Mean (range)	144	15.4 (3.0-74.0)	111	14.6 (3.0-71.0)	33	17.9 (3.0-74.0)	
Treatment recommendation							**0.028**
General anesthesia in the OR	103	71.5%	78	70.3%	25	75.8%	
Administration of nitrous oxide	31	21.5%	28	25.2%	3	9.1%	
Oral sedation, local anesthesia	10	7.0%	5	4.5%	5	15.2%	
# of CHW-patient contacts							**0.003**
Mean (range)	144	17.9 (0.0-94.0)	111	15.5 (0.0-57.0)	33	25.7 (3.0-94.0)	
# of weeks for initiating the treatment							**0.012**
Mean (range)	137	10.8 (0.0-51.9)	107	9.1 (0.0-38.7)	30	17.0 (1.6-51.9)	
# weeks for completing the treatment (adj. for # of visits)							**0.020**
Mean (range)	135	1.7 (0.0-34.4)	106	2.0 (0.0-34.4)	29	0.2 (0.0-3.9)	
Travel distance to the pediatric dentist (miles)							0.165
Mean (range)	144	49.1 (19.0-90.0)	111	48.5 (19.0-90.0)	33	51.3 (23.0-81.0)	

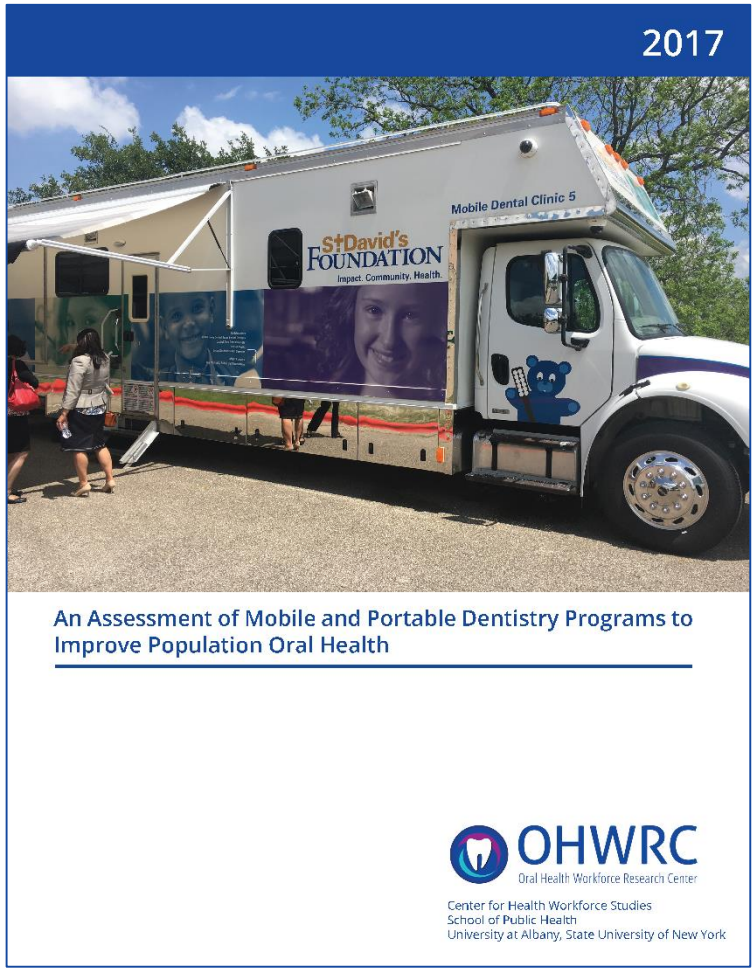
OHWRC
Oral Health Workforce Research Center

Conclusions

- Teledentistry consultation promoted access and utilization of specialty oral health care as well as follow-up services at local dental clinics for rural children with severe dental decay
- The study results indicate that case severity and compliance to treatment are predictors of utilization of oral health services in general dentistry clinics
- Case management interventions are important in facilitating specialty dental care as well as follow-up care at community dental clinics, particularly in rural, underserved communities
- A study of the long-term dental utilization patterns of these children who experience a teledentistry consultation and a surgical intervention in early childhood would be instructive

OHWRC
Oral Health Workforce Research Center

Case studies of Mobile and Portable Dentistry Programs:



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

Study Background

- Progressively more capable portable imaging technologies and treatment modalities enable service delivery
- 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
- Although mobile and portable oral health programs initially focused mainly on children in schools and Head Start programs, many now serve diverse vulnerable populations

Objectives

- Describe the various structural configurations of portable and mobile oral health service delivery programs, including emerging models and applications
- Discuss the various populations targeted for services by these programs
- Detail regulatory variation by state for mobile and portable dentistry programs
- Examine, where possible, the oral health outcomes of preventive interventions through portable dentistry in underserved communities

Methods

- Case studies of 7 organizations providing mobile and portable dentistry services across the US 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
- The study used a protocol of questions but the interviews were mainly unstructured

Common Themes Developed From Case Study Interviews

- Mobile and portable dentistry programs have grown organically to meet the needs of particular vulnerable populations or geographic areas for oral health services
- The scope of services ranges from preventive services to a full complement of dental treatment services
- These programs are an effective means of integrating oral health services into primary care environments
- Efficient service delivery required strong oral health care teams consisting of a range of dental professionals, along with supportive personnel such as social workers
- These programs are supported by various funding sources, including using a mix of retainer fees, reimbursement for services, capitation payments, philanthropy, & grant funding

Examples of programs providing preventive services to thousands of school children annually

Future Smiles, Las Vegas, Nevada

- Dental hygienists provide services in 5 fixed school based dental clinics and in a portable format in other schools
- 4,800 children receive preventive services each year in the 5th largest school district in US
- The practice participates with the state sponsored sealant program

Health Promotion Specialists, Lexington, South Carolina

- Dental hygienists provide services in 46 school districts
- 23,000 children receive preventive services each year; most of children are Medicaid insured
- The practice participates with the state sponsored sealant program

OHWRC
Oral Health Workforce Research Center

Examples of programs working with medical providers to integrate health services

Access Dental Care, Asheboro, North Carolina

- Mobile program designed for special-needs populations in 23 counties and 86 facilities
- Offer a range of dental treatment services in convenient locations such as group homes, skilled nursing facilities, and medical clinics
- The program provided >100,000 patient appointments for oral health services since its inception in 2000

Northeast Mobile Dental, Derry, New Hampshire

- The program serve residents of 75 skilled nursing facilities in 3 states (NH, NY, VT)
- Provide routine preventive, treatment, and emergent dental services
- Train certified nurse aides to help patients with daily oral hygiene

OHWRC
Oral Health Workforce Research Center

Conclusions

- Mobile and portable dentistry services appear to mediate structural and financial barriers to oral health services experienced by some populations
- Mobile programs are remarkably successful in their ability to reach vulnerable populations, including children, elders, people with special needs, and people living in poverty
- Mobile and portable dentistry providers recognized the imperative for partnership with the local oral health services delivery system to enable supplemental care for patients
- Several of the programs either wholly constituted a dental home or were connected to a provider that could offer comprehensive dental services

Thank You

Questions?

Visit Us:

http://www.chwsny.org/

www.oralhealthworkforce.org



OHWRC
Oral Health Workforce Research Center