

Case Studies of Six Teledentistry Programs: Strategies to Increase Access to General and Specialty Dental Services

Presented by: Margaret Langelier, MSHSA

Deputy Director, Oral Health Workforce Research Center
Project Director, Center for Health Workforce Studies
School of Public Health | University at Albany, SUNY

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The OHWRC at CHWS

- The [Center for Health Workforce Studies \(CHWS\)](#) has more than 20 years' experience studying all aspects of the health workforce:
 - Established in 1996
 - A research center of the University at Albany School of Public Health
 - Committed to collecting and analyzing data to understand workforce dynamics and trends
 - Goal to inform public policies, the health and education sectors, and the public
 - Broad array of funders in support of health workforce research
- This study was funded under a three year cooperative agreement with the US Health Resources and Services Administration (HRSA) for an [Oral Health Workforce Research Center \(OHWRC\)](#) based at CHWS

Study Background

- Objectives:

- To describe contextual conditions affecting decisions about teledentistry
- To identify facilitators and barriers to implementation
- To hear provider attitudes about and satisfaction with the modality

- Qualitative methodology:

- Collective case studies of 6 provider organizations
- Conducted in the spring and summer of 2016
- Consisted of multiple interviews at each organization

- Participating organizations:

Purposeful selection of participants to demonstrate applicability of teledentistry to providers with diverse organizational structures and patients

- An independent dental hygiene practice (CO)
- A nonprofit staff model group dental practice (MN)
- A dental service/dental maintenance organization (OR)
- A dental residency program (GPR and AEGD) (NY)
- A district health department (GA)
- A FQHC and Migrant Health Center (NY)

Teledentistry Programs Use Different Methods

- **Video Conferencing:**
 - Allows patient and attending provider (eg, a dental hygienist) to interface in real time with consulting dentists
 - Permits immediate diagnosis and treatment planning
 - Especially useful for specialty consultations
 - Consulting dentist has often reviewed patient history and current problem prior to patient interface
- **Store and Forward:**
 - Useful mainly in states where dental hygienists have broader scopes of practice. Assessment completed and images acquired. Preventive services can be provided.
 - Creates efficiencies for dentist permitting treatment planning for additional patients at end of clinical day
- **Mobile Technologies:**
 - Not as applicable to oral health—scheduling appointments (MyDentist), imaging and consultation (Oral Eye)

Teledentistry is an Emerging Modality To Improve Access to Oral Health Services

Special Characteristics of Rurality:

- Higher rates of chronic disease
- More elders
- Limited availability of health and oral health services
- Greater dependence on public health insurance
- Lower levels of community water fluoridation
- Lack of public transportation or dependable private transportation

Rural Populations Exhibit:

- Higher rates of oral disease
- Lower rates of service utilization
- Higher rates of inappropriate use of EDs
- Poorer oral health outcomes generally

Populations of Particular Concern

- Children
- Functionally impaired elders
- Elders confined to nursing care
- Migrant workers
- Special needs populations

Teledentistry is a Relevant Strategy for Linking Patients with Clinical Providers

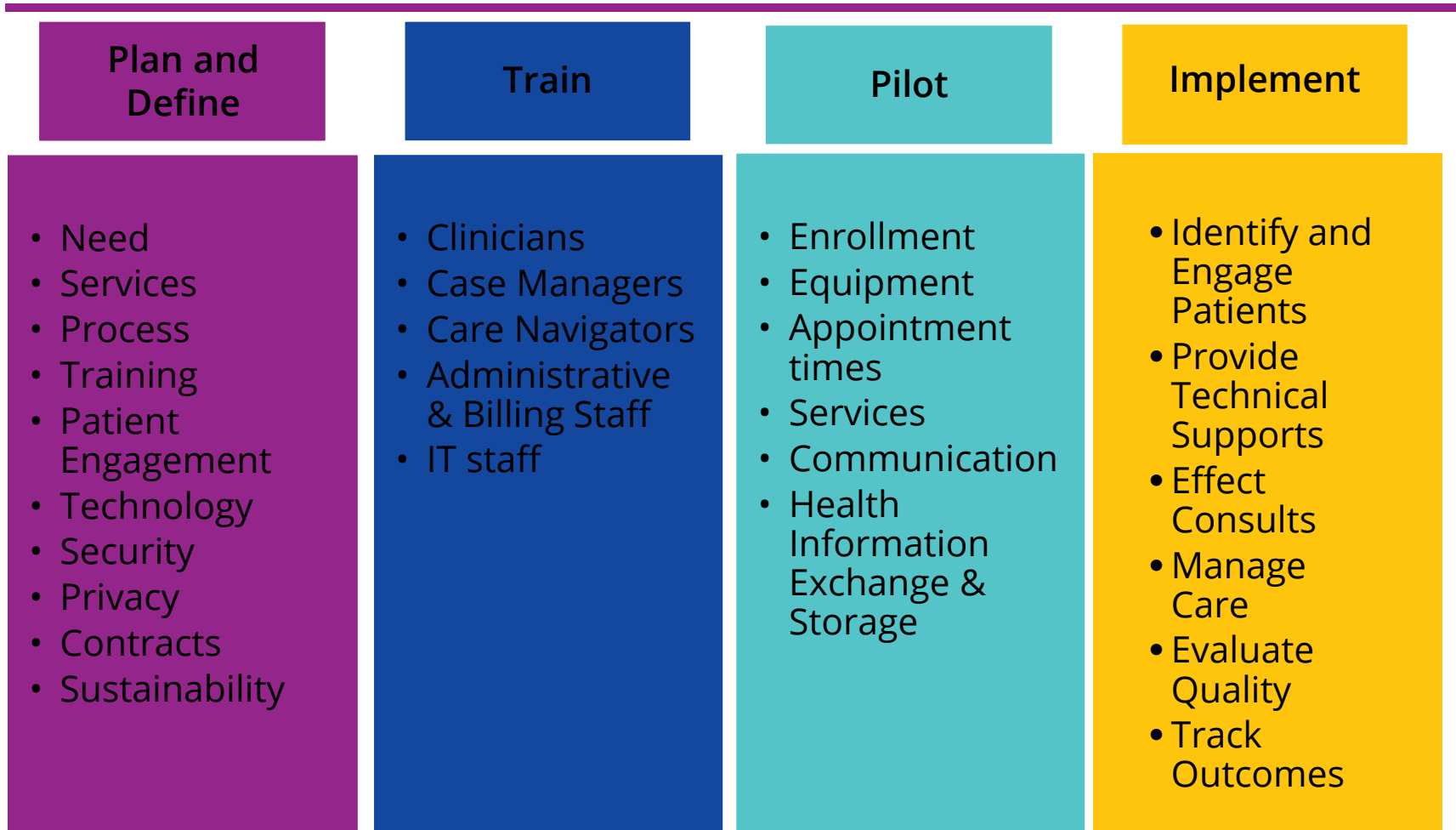
- Geographic and socioeconomic factors were among the multiple barriers to oral health services
- Limited supplies of oral health providers and limited participation in public insurance programs
- Difficult for parents in minimum wage jobs to take time off to take children to dental appointments
- Automobiles are often unreliable for long distance travel
- Seniors confined to a personal residence or a nursing home have mobility issues and cognitive deficits that make getting to providers and then the provision of oral health services especially difficult
- Seniors more receptive to services in comfortable surroundings accompanied by known staff
- Children with dental anxiety were also less anxious in school environments
- Teledentistry is also a tool for education

“Telehealth and teledentistry services are considered a value based activity. Our FQHC operates in rural communities with few or no available medical or dental specialists, so these services provide access to specialty care. Patients and staff are educated from listening to and working with the specialists who care for the health center’s patients. These services have also built professional relationships across provider systems and contributed to the quality of care in the comprehensive health home.”

Preliminary Planning and Focused Training of Staff Prior to Program Implementation is Key to Efficacy

- Careful program development and commitment of clinical, administrative, and support personnel
- Planning for:
 - Patient record acquisition, management, sharing, and storage
 - Maintenance of privacy and security of patient health data across delivery systems
 - Compatible equipment and technology at both endpoints
 - Clearly established staff responsibilities along the continuum of care
 - Design of care management at both the hub and spoke
 - Staff and clinician training on the process and the equipment
 - Management of regulatory compliance
 - Contractual agreements between organizations
 - Reimbursement for services
 - Durable funding to ensure integrity and sustainability

Process for Implementing Teledentistry Services



Infrastructure Requirements Vary but Certain Basic Technology is Essential

- High speed broadband
- Wireless modems
- Dedicated bandwidth
- Network interfaces and bridges to achieve interoperability
- Desktop or laptop computers
- Software including image storage and retrieval programs, electronic dental records, administrative modules
- Encryption and security software
- Intraoral cameras, portable x-ray equipment, and sensors
- Fixed, mobile, or portable dental chairs, a water supply, sterilizing equipment
- Video conferencing technology including monitors
- Voice over IP for telephones

Teledentistry Enables Patient Centered Services Coordinated by an Inclusive Oral Health Care Team

Teams rely on a variety of workforce:

- Dentists, dental hygienists, dental assistants
- Care managers, patient navigators including community health workers
- Social workers
- Information technology personnel
- Administrative and executive staff

Teledentistry is interactive—exchanges between:

- Clinicians (dentist to dentist, dentist to dental hygienists)
- Patients and clinicians
- Clinicians and support staff (dental hygienists and social workers or care coordinators)
- Team meetings involving all stakeholders

Teledentistry is Useful for Delivering Both Primary and Specialty Dental Services

Primary care – real time or store and forward:

- Diagnostic and treatment planning services
- Real time to provide virtual supervision (if required by state regulation)
- Permitted triage to appropriate level of care and provision of services in the patient's community
- Reserved scarce dental resources for patients in need of treatment services

Specialty care – real time or store and forward:

- Pre-visit review
- Lower anxiety levels in familiar surroundings
- Improved specialty appointment scheduling

Teledentistry is Useful for Delivering Both Primary and Specialty Dental Services

Services may be multi-pronged:

- Store and forward used by primary dentist to determine need for real time teledentistry consult with specialist

Many benefits:

- Ease of Access
- Risk assessment/ early diagnosis/ referral
- Shorter time to treatment
- Cost avoidance (travel, time from work)
- Preventive care in familiar setting – reduces dental anxiety
- Providers report high levels of satisfaction among patients and staff

“Teledentistry is an especially promising modality to deliver services to people with developmental disabilities or special needs, nursing home residents, people in rural areas or inner cities, and children in schools and in preschool programs. The benefits of teledentistry are most evident when one considers the beneficial outcomes from the services, including shorter time frames to obtain specialty consultations, higher treatment completion rates, lower no-show rates for appointments, and improved workflow efficiencies for patients, providers, and support staff.”

The Modality is Cost Effective but Finding Sustainable Funding is Challenging

- Value based method to provide oral health services
- Allows the organization to provide continuum of oral health services and to effect a comprehensive dental home
- Blending funding from federal and state grants, senior programs, philanthropy, pilot/demonstration grants, etc.
- Difficult to maintain:
 - Concerns of policymakers about effectiveness
 - Variation in reimbursement policies among insurers
 - Reluctance of state Medicaid programs to fund
 - Especially important since targeted patients are underserved
 - Some limit only to real time consultation
 - May limit reimbursement only to consulting provider

Teledentistry is an Effective Modality for Providing Education and Training

- Concurrent benefit – education of patients and providers
 - ***“Patients and staff are educated from listening to and working with the specialists who care for the health center’s patients. These services have built professional relationships across provider systems and contributed to the quality of care in the health home.”***
 - ***“Telehealth/teledentistry services have changed the practice of medicine and dentistry in the clinics because of the frequent and ongoing communication between primary care providers and dentists and medical and dental specialists.”***
- Used by dental residency programs for case learning activities in real time
 - To present complex patients (using stored images, patient history)
 - to consult with other dental residents and preceptors in distant locations about case management and treatment.
 - Multiple presentations over time of treatment to show case progression and outcomes

Conclusions

Teledentistry:

- Permits triage to the most appropriate level of care
- Maximizes scarce resources
- Patients remain in community for basic services (70% of Head Start children in one program)
- Providers find the modality efficient, timely, and cost effective
- Team building
- Patient centered care
- Value added services
- Ease of access to difficult to obtain services
- Barriers at the state level are financial and regulatory

Questions?

Contact Information:

Margaret Langelier, MSHSA

Oral Health Workforce Research Center

Center for Health Workforce Studies

School of Public Health | University at Albany, SUNY

MLangelier@Albany.edu