

## Case Studies of 6 Teledentistry Programs: Strategies to Increase Access to General and Specialty Dental Services

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### Introduction/Background

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Concerns about limited access to oral health services for underserved populations are prompting providers to adopt innovative service delivery models to meet the needs of those with access barriers. While access to health care services for the underserved has improved over recent years, the availability of oral health services continues to be limited for many, especially for the rural poor. Populations living in rural areas experience diverse challenges to obtaining oral health services, including higher rates of chronic disease, higher percentages of elderly people, limited availability of health and oral health workforce and provider organizations, higher rates of poverty, lower rates of dental insurance, and greater dependence on public insurance coverage. As a result, rural populations exhibit higher rates of oral disease, lower rates of oral health services utilization, greater rates of inappropriate emergency department usage for dental complaints, and poorer oral health outcomes generally than other population groups. Strategies to increase access to and utilization of oral health services must be tailored to these special characteristics of rurality. Although dental services are now increasingly provided in public health settings in rural areas, including federally qualified health centers, access to services in the safety net is constrained by limited resources and capacity, including a limited supply of clinical providers. The use of teledentistry as a means to improve access to oral health services in areas with inadequate availability of general and specialty dental care is emerging as a practical solution, especially for treatment planning and specialty consultations.

### Methods

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The research was qualitative, using a collective case study methodology to describe delivery of teledentistry services by six provider organizations. Organizations were selected for the case studies based on a history of using teledentistry for delivering oral health services and for having established strategies to sustain teledentistry services. The case studies were conducted in person and by telephone. Research staff visited provider organizations and when possible, a spoke location where teledentistry services were offered, including a school and a general dental clinic. A variety of executive, administrative, and clinical staff were interviewed from each location.

### Findings

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Case study participants identified the benefits of teledentistry; the modality provided opportunities to assess the oral health status of a patient, to accomplish risk assessment and determine treatment needs, to educate patients about treatment options, and to

### Conclusions and Policy Implications

- 1) Teledentistry is an appropriate strategy for linking patients with clinical providers who are not otherwise easily accessed.
- 2) Patients experienced shorter wait times to obtain consultations and services, and providers found teledentistry to be efficient, timely, and cost effective.
- 3) Teledentistry enables efficient use of scarce dental resources in underserved communities and allowed providers to triage patients to the most appropriate level of care.
- 4) Maintaining teledentistry services requires the ongoing participation of a broad range of clinicians and support staff in sponsoring organizations.
- 5) Regulatory and reimbursement barriers included scope of practice requirements for dental hygiene, inadequate funding for teledentistry services, and regulations that inhibited their provision.

effect appropriate referrals. The findings from the case studies are summarized in the following common themes:

- Teledentistry is a relevant and appropriate strategy for linking patients with clinical providers who are not otherwise easily accessed.
- The effectiveness of teledentistry services is predicated on significant preliminary planning processes and focused training for providers before implementation of a teledentistry program.
- Infrastructure requirements vary by location but certain basic technology is essential to provide high quality services.
- Teledentistry services are useful for delivering both primary and specialty dental consultations.
- Teledentistry offers the opportunity to provide patient centered services coordinated by an inclusive team of clinical providers and other organizational staff.
- Teledentistry is a cost effective modality for both patients and providers, but finding sustainable funding to provide the services is challenging.
- Teledentistry is an effective modality for providing continuing education and training for practicing clinicians, for dental students and dental residents, and for other members of the oral health team.
- Evaluations of the effectiveness of teledentistry programs are lacking. There are many outcomes of interest that would benefit from further study.

## Conclusions

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Teledentistry is an emerging modality for delivering oral health services to populations with significant difficulty finding services due to geography or other factors that limit the accessibility or availability of dental care. Case study participants commented on the efficacy of teledentistry for patients, especially on the advantages for triaging patients to the most appropriate level of care. A percentage of patients who were assessed through teledentistry consults were able to remain in their local communities for basic oral health services and for care management. As a result, scarce dental resources in communities were appropriately reserved for patients in need of more extensive treatment or surgical services, or for those assessed at high risk for disease. Patients experienced shorter wait times to obtain consultations and services, and providers found the modality efficient, timely, and cost effective.

Maintaining teledentistry program services required the ongoing participation of a broad range of clinicians and support staff in sponsoring organizations, with all parties focused on delivering patient centered care. However, informants discussed regulatory and reimbursement barriers that affected providers' engagement with teledentistry, including scope of practice requirements that limited the practice of dental hygiene in remote locations, inadequate funding for teledentistry services, and regulations that inhibited their provision. Adequate reimbursement for the cost of delivering teledentistry services was a concern among case study participants, especially since costs to deliver those services accrue at both the hub and the spoke locations. Rising interest in the use of teledentistry to address unmet need in certain populations has resulted in legislative action in several states to define parameters for the services and to provide funding for its use. This study used qualitative methods to describe teledentistry programs in organizations providing oral health services to diverse populations, but was unable to find quantitative data to support its efficacy. Further quantitative research is needed to document the impact of teledentistry on cost of care, access to services, and patients' oral health outcomes. Several demonstration projects across the U.S. promise to enhance knowledge of the efficacy and utility of the modality in the coming years. Data generated by existing programs and from proposed demonstration projects should provide better documentation to describe the benefits and impacts of teledentistry services on patients' oral health outcomes.