Brief Report

Use of a teledentistry partnership program to reach a rural pediatric population

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ABSTRACT

Background: Teledentistry is "the practice of using video-conferencing technologies to diagnose and provide advice about treatment over a distance." Teledentistry has been defined as "the practice of using video-conferencing technologies to diagnose and provide advice about treatment over a distance." This report describes the partnership of two rural Georgia public health districts. Augusta University Dental College of Georgia's Department of Pediatric Dentistry partnered with a private practice dentist in Georgia with the goal of increasing access to care.

Methods: A partnership was created that allowed dentists in a remote location to triage dental patients seen in a school-based clinic.

Results: Over 3500 children were treated in a school-based dental clinic over a five year period and triaged for referral for further treatment via a teledentisty link.

Conclusions: Teledentistry provides an option to reach rural populations for whom access to dental care is an issue.

Key words: Teledentistry, rural health initiative

https://doi.org/10.21633/jgpha.6.311

INTRODUCTION

Teledentistry has been defined as "the practice of using video-conferencing technologies to diagnose and provide advice about treatment over a distance" (Chen 2003). According to a resolution of the House of Delegates of the American Dental Association in 2015, it can take many forms, including live video, which could allow for two-way interaction between a patient and a dentist using technology; the secure transmission of patient information such as radiographs to a practitioner who evaluates the patient remotely; remote monitoring of patients for whom access to care is an issue; or healthcare supported by mobile communication devices such as cell phones or tablets. Teledentistry can be an effective way for dental personnel to be supervised by a dentist in a remote location, thus extending care to underserved patient populations and helping to ease the shortage of dental providers (ADA News 2017).

The Southeast District Health Department (SEHD) began providing telemedicine services in 1994, and since then it has been a leader among Georgia's public health districts in developing and providing clinical telemedicine services to its residents. Telehealth services began with a linkage between the Ware County Health Department and the Medical College of Georgia. Services have evolved to include the formation, in March 2000, of the Southeast Telehealth Network to expand telehealth services throughout the region. In September 2000, the SEHD received funding to expand telehealth activities to more counties within its service area. The Augusta University (AU) School of Dentistry has supported SEHD since the inception of the pilot program. Over the course of the program, providers from the school have overseen the work of several hygienists in assisting thousands of children and providing dental consultation and education. For complicated or extensive cases, the facility serves as a pediatric referral site for network members and the state of Georgia in general.

The Teledentistry Program is a partnership of two rural Georgia public health districts (SEHD and South Central Health District (SCHD), AU Dental College of Georgia's Department of Pediatric Dentistry, and a private practice dentist in Ware County, Georgia. The mission of the network is to provide a system of care to meet the oral health needs of individuals living in South Georgia. The network has created a means of access to oral health care for pediatric patients that was lacking in this part of the state. Network members, established by contract, consist primarily of dental providers, dental schools, and public health providers. This is due to state laws that allow only public health hygienists to practice teledental services under remote supervision of a dentist.

The teledentistry clinics in Brantley, Charlton, and Clinch counties are single-county Dental Health Professional Shortage Areas (DHPSAs) in rural southeastern Georgia. These clinics are set up in elementary schools, where schedules are created to minimize time out of the classroom. Dental hygienists provide cleaning, fluoride, radiographs,

and dental education with state-of-the-art interactive video consultation by board-certified pediatric dentists at AU. Services are not billed, so children have a source for follow-up with providers. After the visit, a local dentist reviews each case, and information is mailed home to parents, thus saving the parents transportation costs, lost wages, and preventive care costs. For the children who need follow-up, the caregiver is called to offer assistance, and a case manager is contracted to assist with more involved cases. The effects are: 1) children come to school ready to learn because they experience less dental pain; 2) there are reduced rates of absenteeism for dental-related illness and appointments; 3) dental providers receive information from screenings and have insurance available to pay since services are not billed at the clinic, and 4) children find a "dental home" for future dental services.

METHODS

The current customers of the network are school-aged children in rural areas where there is a lack of dental providers. All children at participating schools are seen, provided parental consent is granted. By working with school staff and nurses to identify the needs of patients who have presented with dental or oral health problems, children are divided into groups by level of severity. Demographic data collected in 2013 shows a total population of 105,000, with thirty-two percent of the population as Medicaid recipients in the catchment area. Although eligibility for Medicaid and Peachcare can help relieve the financial barriers to oral health treatment, these have less effect for accessibility due to a shortage of providers in the area who accept new Medicaid or Peachcare clients.

RESULTS

Table 1 lists the numbers of children seen through the teledentistry program for the past five years. Also listed are the race/ethnicity of participants as well as the payment source and referral recommendation. Based on age and severity of treatment needs, children were referred to either a general dentist, a pediatric dentist, or to the AU Dental College of Georgia for treatment under general anesthesia. For each of the past five years, more than 56 percent of the children seen were referred for restorative treatment of carious lesions evident from radiographs or clinical photos or both, with a high of 74 percent seen in 2015-16 needing referral.

DISCUSSION/CONCLUSIONS

Tooth decay is one of the most preventable childhood diseases, yet oral health care remains the most prevalent unmet health care need for children, especially low-income children (King 2016). Because of the lack of providers, rural areas have additional barriers to dental care when compared to other locations (Yu 2017). The targeted network counties are dental health professional shortage areas (HPSAs) as designated by the Health Resources and Services Administration. This network has built on lessons learned by each partner in providing dental services to poor, rural populations. Since many rural areas could benefit from teledentistry, the plan is to make the network processes transferrable and sustainable.

Table 1. Summary of teledentistry visits and referrals

School year	2011-12	2012-13	2013-14	2014-15	2015-16
# Children seen	909	1091	650	325	616
Race/Ethnicity					
Black	238 (26.1%)	356 (32.6%)	233 (35.8%)	131 (40.3%)	126 (20.5%)
White	631 (69.4%)	695 (63.7%)	389 (59.8%)	173 (53.2%)	392 (63.6%)
Hispanic	24 (2.6%)	21 (1.9%)	12 (1.8%)	8 (2.5%)	10 (1.6%)
Asian	8 (<1%)	6 (<1%)	0	2 (<1%)	1 (<1%)
Other/Unknown	8 (<1%)	13 (1.2%)	16 (2.5%)	11 (3.4%)	19 (3.1%)
Payment Source					
Private Insurance	162 (17.8%)	109 (10.0%)	79 (12.1%)	22 (6.8%)	60 (9.7%)
Medicaid/Peachcare	345 (38.0%)	565 (51.8%)	312 (48.0%)	196 (60.3%)	389 (63.1%)
No Insurance	396 (43.5%)	417 (38.2%)	259 (39.8%)	107 (32.9%)	92 (14.9%)
Unknown					40 (6.49%)
Referral recommendation					
# No Further Services	333 (36.6%)	482 (44.1%)	229 (35.2%)	81 (24.9%)	163 (26.5%)
# Referred to General Dentist	293 (32.2%)	293 (32.2%)	293 (32.2%)	293 (32.2%)	192 (31.2%)
# Referred to Pediatric Dentist	282 (31.0%)	294 (27.0%)	256 (39.4%)	123 (37.8%)	260 (42.2%)
# Referred to DCG* at AU (for surgical treatment)	3 (<1%)	2 (<1%)	0	0	1 (<1%)

***** DCG, Dental College of Georgia

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