Teledentistry: Increase Access To Dental Specialists In Rural Minnesota

Hong Chen, DDS, MS, James R. Fricton, DDS, MS
University of Minnesota School of Dentistry, Minneapolis, MN

Abstract

This current pilot project presents the experience of University of Minnesota School of Dentistry (UMNSOD) to use real-time videoconferencing technology to increase access to dental specialty care in rural Minnesota.

Introduction

Teledentistry is an exciting new area in dentistry that fuses electronic health records, telecommunication technology, and the internet to increase access to dental specialists in rural or remote communities.

This project aims to create a teledentistry network linking University of Minnesota School of Dentistry specialists to dental practitioners and patients in sites in remote rural areas where access to care is problematic. The project focused on teleconsults for orofacial disorders in special areas of dentistry including Temporomandibular Disorders and Orofacial Pain, and Oral Medicine. These conditions are very common in the general population and have potentially high morbidity associated with them. However, well trained dental specialists in these fields are rare in the remote areas.

Methods

The first UMNSOD teledentistry demonstration site was set up at the Hibbing Community College Dental Clinic, which is located approximately 200 miles north of Minneapolis/St. Paul metro area. Both store-and-forward and live videoconferencing were used for teleconsults. To best fit the dental operatory need, mobile cart with portable SONY PCS TL-50 videoconferencing unit, Data Solution Box, and an accessory intra-oral camera were provided at remote site. Live videoconferences were conducted via IP connection.

Evaluation

This program started in December 2004. To date, approximately 9 dental specialists at the UMNSOD have been involved in providing teledentistry consults for patients with orofacial disorders including TMD, orofacial pain, oral medicine and oral pathology conditions such as xerostomia, burning mouth, and oral lesions, behavioral dental issues, and physical therapy in rural areas of northern Minnesota.

Provider satisfaction survey revealed overall high satisfaction and acceptance to the teledentistry consults. In over 90% of the visits, the specialists were satisfied with the teleconsults and said the trip to their office was saved. In about 94% of the visits, specialists were as confident about providing adequate diagnosis and treatment planning as in a face-to-face visit.

In general, patient reported high satisfaction with teledentistry program as well. A total of 13 patients have made 24 teledentistry visits through the course of their care. Majority of the patients felt comfortable with the teledentistry visit. The greatest benefit that teledentistry provide to patients include reduced travel time and the time being off. Instead of driving 200 to 300 miles one-way to the University for care, the average distance for visiting the teledentistry clinic is only 13 miles. On average, a teledentistry visit will cost less than 2 hours, compare to 18 hours would have been missed if the patient has to travel to the university clinic for the visit. The overall patient satisfaction that teledentistry clinic met their current healthcare needs was rated 6.9 on average (1 = not satisfied at all, 7 = completely satisfied). Approximately half of the patients reported that they would not have preferred to see the specialist in person mainly because of no perceived necessity and that teledentistry provided similar “in-person” experience.

Conclusion

The University of Minnesota teledentistry program has received high satisfaction evaluation from both patients and dental specialists. Currently, the program is under the evaluations for cost, effectiveness, and outcomes. Future aim is to expand the program to other Minnesota rural areas and other dental specialties.

Acknowledgment

This project was supported by the State of Minnesota Department of Health Dental Innovation Grant (#A83427).