

“The Missing Link” in Teledentistry

by Dr. Richard Simpson, DMD

In various fields of science, the search for a missing link goes on, and the questions are challenging. Is Australopithicus sediba the missing link in evolutionary theory? I don't know that. I would refer you to the anthropologists and biologists if that is of interest to you. Will neutrinos finally be the answer to the unaccounted for mass in the universe? Will general relativity and quantum mechanics ever be unified? You'd have to ask Neil DeGrasse Tyson. Or for kicks, try Brian May. (Yes, the co-founder and lead guitarist for Queen has a PhD in Astrophysics!). I obviously am in no way equipped to broach these subjects with any credibility.

However, I would like to propose that there is, and has been, a lack of significant inquiry into what I believe is the “missing link” in a field in which I am more acquainted...Telehealth and Teledentistry. The questions, and the answer, are not so grand in scope or depth as in the aforementioned subjects, but they have very meaningful and practical implications in the everyday application of telehealth systems in oral health.

So, I ask...

Is there a missing link in Teledentistry? Yes.

What is it? The ability to easily and remotely illuminate the oral cavity, capture superior images and videos with a portable device, mark areas of concern and comment if indicated, send these images to providers securely without the necessity of wi-fi, receive these images for review and upload into a patient electronic health record regardless of the platform or software, and be able to do this at very low costs, from any location, thousands of times. More simply put, the missing link in teledentistry, and in the medical-dental remote assessment and management of patient oral health, is the capture and transmission of quality imaging of the entire mouth and oropharyngeal areas.

When will it (aka a solution) be found? My impression is that it is already available, and I will discuss this further after a brief review and a question I propose to the reader.

In a recent interview on [“This Week in Health IT”](#), Dr Joe Kveder of Harvard University stated “...we're now learning what it means to be in implementation mode versus proof-of-concept or experimentation mode” with regards to telehealth. I

suggest this is more so the case in teledentistry, as prior to the COVID 19 crisis we were well behind medicine in the fielding of many of the concepts and grand potentials for telehealth utilization in all areas of oral health care. The pandemic crisis rapidly accelerated the acceptance and adoption of various methods for remote triage and emergency management of patients. Further, it brought to the forefront extensive discussions, studies, proposals and debates on the potential benefits of telehealth services for the future of oral health care. How best to utilize this new technology to implement the multitude of pre-COVID visions for medical-dental integrated and comprehensive care, while improving access to patient centered prevention and intervention in oral health that was evidence based?

Being somewhat familiar with NNOHA, my expectations regarding the readership of this article is that you represent many varied backgrounds and roles within our health care system, and you have a strong interest in oral health and an understanding of its inseparable role in overall health and well-being. Many of you are also likely familiar with some of the great work and publications by organizations such as The CareQuest Institute of Oral Health, the Primary Care Collaborative, NACHS, and NNOHA in addressing health disparities and the challenges and failures of our current care delivery models, particularly with regards to care gaps between medical and dental care and underserved populations. Many of you are also likely now experienced first-hand in the implementation of some form of telehealth services in your own clinics and facilities. That being said, I ask that you please consider the following scenarios. One or more of them you will likely be familiar with:

- Co-located dental and medical facilities within a CHC or other facility, and an agreed upon desire amongst the staff to develop a more comprehensive approach to care with shared decision making between the services and the patient.
- The embedding of oral health specialists, such as dental hygienists, in medical facilities with an ability to utilize telehealth to consult with a dentist.
- Emergency Departments, hospitalists and nurses, urgent care centers, free standing primary care facilities, retail health clinics, and school nurses consulting with a dentist for triage, diagnosis, prescription and care recommendations, and determination of disposition for follow up care.
- Rural health centers and medical offices consulting with a dentist and hygienist through telehealth for oral cancer examinations or chronic disease management.

- Outreach programs for oral health screenings and prevention education, and documentation of oral conditions for asynchronous review later.
- Pre-surgical evaluations and post-surgical follow-ups for pediatric hospital cases, special needs patients, and oropharyngeal cancer or orthognathic surgery for patients that travel long distances.
- Skilled nursing and assisted living facility staff members utilizing telehealth to consult with a dentist for a resident patient.
- Dental and medical school faculty and students utilizing teledentistry for interprofessional training and collaboration in community outreach programs.
- Public health teams performing school screenings or mission teams working with developing countries in oral health data collection and epidemiological assessments for targeted prevention and intervention strategy planning.

Each of these scenarios are all in the earliest stages of “implementation mode” utilizing various telehealth modalities. There are several considerations and challenges currently, to include security, integration into multiple EHR platforms, workforce planning, and so on. However, there is one single “missing link” that is universally vital to the success of each and every one of these scenarios. Can you guess what it is? It is the ability to remotely illuminate and capture quality images of the entire oral cavity with minimal training, at low cost, from any location. If the images are incomplete or of poor quality, the program or system you are trying to implement is hindered. The camera on a laptop, tablet, or smartphone is inadequate for full access and lighting. Most health facilities do not have a dental intraoral camera, and if a “mobile” telehealth cart is available, it is cumbersome, requires a trained staff member to use it, and it is rarely equipped to provide quality intraoral images and video.

At the beginning of this article, I mentioned that a likely solution to this dilemma may already be available. The [TelScope Telehealth System](#) by [Holland Healthcare](#), combined with the TelScope Telehealth System app, turns any mobile smart device into an all-in-one handheld intraoral light and camera. In my experience, the images are of exceptional quality, and the ability to zoom in and out, thoroughly illuminate and examine the throat and entire oral cavity, and capture and securely send the images, raises the bar and the capabilities for any oral health program you design or implement that would utilize telehealth capabilities.



[TelScope Telehealth System](#), by [Holland Healthcare](#)



Captured with [TelScope Telehealth System](#), by [Holland Healthcare](#)

With every challenge comes opportunity, and although none of us would have ever foreseen such a challenge as the pandemic, health care has been given an accelerant to move forward to improve access and outcomes. The desire and ability to incorporate technological advances in telehealth to reduce disease burdens, address disparities, enhance value based care, and better integrate oral health into a comprehensive care model is genuine and increasingly accepted. The right tools to maximize the technology at a non-prohibitive cost are critical to implementing these new delivery models.



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