As technology continues to march into the future, its footsteps are heard loudly in the realm of health care. Data has become the new penicillin, five-step procedures have yielded to technical advances and become three-step procedures, and in both medicine and dentistry, a new buzzword has emerged—telehealth, using technology to deliver health care and information from a distance.

In yesteryear, a wood-paneled station wagon pulled up to the curb and out stepped a doc with a well-traveled leather satchel, ready to make a house call. Today, replace the car and the satchel with a laptop and a wireless internet collection, and you’ve got telehealth.
Within telehealth, there are three types of services: store-and-forward, known as asynchronous communication; real-time video, known as synchronous conversation; and remote patient monitoring. Dentistry has integrated all three into the powerful tool of teledentistry in an attempt to improve access to care, reduce the cost of care and increase efficiency through reduced travel times, shared professional staffing and fewer in-person appointments.

In its white paper “Teledentistry: How Technology Can Facilitate Access to Care,” the Association of State and Territorial Dental Directors notes that in California, Colorado and Missouri, teledentistry has been used as the foundation to develop the virtual dental home. In this model, dental hygienists go to community sites such as schools and long-term care facilities to provide services within an expanded scope and transmit digital records to a dentist for review. (This is an example of store-and-forward technology). Monitors of the California program found that two-thirds of the patients in the virtual dental home required only preventive services and did not need to be physically seen by a dentist.

The Arizona School of Dentistry & Oral Health and the New York University College of Dentistry have incorporated teledentistry into their curricula to increase students’ awareness of and comfort levels with providing care using digital records. Other programs using teledentistry, such as the University of Nebraska Medical Center College of Dentistry, work with school-based health centers where there are no dentists present. In these situations, medical providers such as physicians and nurses gather oral health records and submit them to oral health providers such as dentists and pediatric residents to review and coordinate care for patients.

Just how popular are teledentistry and the administration of telehealth services in general? According to the American TeleDentistry Association, patient participation in all telehealth protocols increased from 250,000 patients in 2013 to roughly 3.2 million last year, and recent studies on the use of telehealth services have shown that 70% of patients are comfortable communicating with their health care providers via text, email or video in lieu of seeing them in person. Additionally, 76% of patients prioritize access to care over the needs for face-to-face interactions with their health care providers.1

Endnotes
1 americanteledentistry.org
Implementing teledentistry into your practice is not the challenge; the challenge is how to utilize the information you gain from the technology.

—Dr. Brittany Kinol, Wexford, Pennsylvania

The entertainer/humanitarian Jerry Lewis had his “kids,” and Dr. Brittany Kinol certainly has hers. As the owner of a pediatric dental practice in a town with a population of roughly 24,000 people, Kinol integrated teledentistry into her practice in 2017, focusing its capabilities on the segment of the population central to her professional calling: children, specifically ones enrolled in Head Start programs—some located as far as two hours away from her practice.

“This allows us to have much more access to kids who normally wouldn’t be seen because of poor access to care,” she says.

“Recently, my hygienist was at a Head Start two hours away that was concerned about a specific boy who regularly attended the program. Personnel at the facility got his parents’ consent for us to treat him,” Kinol says. “My hygienist performed a dental cleaning and a fluoride varnish, and took X-rays, intraoral pictures and an intraoral video. Upon completion of the exam, it was determined that the boy had several abscessed and decayed teeth that needed extractions and restorations.

“I sent a task over Open Dental [practice management software licensed under the GNU General Public License] to my front desk to review the boy’s chart and call his family to get him scheduled for treatment. Head Start then transported the boy and his family to us, and in less than a week and a half, we had him in for a complete oral rehab under IV sedation.”

Kinol uses the specific of this patient’s treatment to emphasize a personal observation regarding what she sees as one of teledentistry’s caveats: “Implementing it into your practice is not the challenge; the
challenge is how to utilize the information you gain from the technology.  

“How are you going to implement the protocols that go with teledentistry? You’ve got to think about the next step. How are you going to get the patient care? Will you provide all the care the patient needs? What are your referrals, and how are you following up with the parents? All of these questions and their answers are important for the success of teledentistry.  

“We’re not just doing teledentistry without providing resources and options for follow-up treatment. We are really following through, and that’s where I think it’s beneficial. Some public health hygienists have this idea that they’re going to go into a facility and do teledentistry simply because they’re allowed to do it. And I ask them, ‘Where are these clients going after it’s been deemed that a referral is necessary?’ They respond, ‘We’ll just send them to a dentist.’ It’s not going to work like that. You’re not helping those patients—you’re actually just hindering them from receiving comprehensive care. We’re very proud that we’re getting services to these kids to the fullest extent.”

**Absolute trust**  

Another caveat for would-be teledentists, Kinol says: Be sure you have absolute trust in your remote team.  

“I’ve been with my hygienists for 12 years; I know their eyes are seeing exactly what my eyes are seeing. I trust them, and when you’ve trained with them in teledentistry protocols, I know I can trust everything they’re writing in their notes, communicating to the patient or parent, and providing me with all the necessary images I need. It’s really a wonderful no-brainer, like ‘Yep, that’s exactly how it’s done in our offices.’”

Kinol is trying to persuade her state dental board to allow public health dental hygiene practitioners in pediatricians’ offices to perform full patient work-ups and teach the office personnel how to use TeleDent software to consult with her, if deemed necessary. Working with like-minded dentists, pediatricians and managed care organizations (Medicaid insurance companies) she hopes Pennsylvania will approve this by the end of the summer.

“We hope to be pioneers of a new medical/dental model of care,” Kinol says. “By bringing medicine and dentistry together, we’ll be getting closer to a more integrative approach to comprehensive health care.”

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In October 2017, I received a grant through a private foundation to establish Missouri’s first teledentistry pilot program. Since then, the health center where I now work as a consultant has seen more than 1,200 patients using teledentistry.”

—Dr. Nathan Suter, House Springs, Missouri
assessment; it’s a little bit beyond a screening because there is actually tooth charting going on,” he says.

“The patient needs to realize my hygienist isn’t performing an exam—I’m not there,” Suter says. “She’s going to collect data, and make sure that the patient’s concerns are recorded and then forwarded to me with the understanding that I may reach out to the patient. And if there is a patient who has an emergency, I will do a live consultation through a HIPAA-compliant videoconference.”

**Expanding access to care**

Suter’s efforts to expand access to care via teledentistry includes opportunities presented by primary care offices at two local community health centers. His hygienist networks with the centers’ primary care physicians; if one of their patients wants to also have dental treatment, the hygienist will perform a teledentistry-based assessment and schedule patients for any required follow-up care with a dentist. When patients show up at the dental clinic they’ve already had their assessment done, and care can be administered right away—with potential lifesaving benefits.

“We once were able to very quickly get a patient visiting the primary care office scheduled to see an oral surgeon,” Suter says. “The primary care doctor noticed a lesion during an exam and called in the hygienist, who was then able to contact the dentist for a videoconference. Within a week, the patient’s lesion was evaluated by the oral surgeon and excised. This saved the patient both time and a visit to the general dentist.”

To Suter, the dawn of teledentistry is filled with excitement and potential. “With faster internet, new technologies and applications emerging, dental organizations are starting to embrace it. I believe more practitioners will utilize teledentistry. That definitely excites me.”

And he’s ready for this pending uptick: He has a four-year contract with the state of Missouri to teach the state’s dentists how to implement and perform teledentistry.
When one walks into Lake Minnetonka Dental, where Dr. Megan Pint practices, the latest in dental technology abounds, exemplified by cutting-edge digital dental X-ray units and two Cerec units.

“We have a whole lot going on with technology, including teledentistry, which is part of why I’ve been at this practice for four and a half years now,” Pint says. “I like being with a practice that openly opts to stay ahead of the curve.” (The practice also is essentially home to her: She grew up five minutes from where she works and five minutes from where she currently lives.)

Because of the practice’s affinity for state-of-the-art technology, Pint says implementing teledentistry into its workflow was extremely easy.

It didn’t hurt that one of Pint’s colleagues, Dr. Bryan Laskin, created software that features a teledentistry app. Pint’s patients who use OperaDDS can submit information and images to her via text message or email; she uses it primarily as a way to extend patients’ access to care after hours and on weekends.

“About a year ago, we started using the app to help with issues that arise when someone contacts you while on call and says, ‘I have a tooth that broke’ or, ‘I had a bracket come off and something’s poking me.’ How do you best triage that, and how do you plan appropriately?” she says.

One recent example: “I had a mom phone me because during some roughhousing at a hockey game her son had chipped a tooth. I asked, ‘Can you tell me how big of a chip?’ She was frantic, saying that it appeared to be quite big, and she was worried because she was staying out of town overnight and wondered if she needed to immediately return to the Twin Cities.

“I asked her to send me a picture and I texted her a link to do so. Upon seeing the picture, the chip was small—there was nothing close to pulp exposure—and I reassured her by telling her, ‘It’s Saturday. I can see you tomorrow if you’re concerned about it but, honestly, this isn’t considered an emergency. We’ll be fine with waiting until Monday.’ Greatly relieved, she said OK.” And because communication occurred through the app and portal, the entire conversation was HIPAA-compliant.
“Teledentistry can be a great patient generator. When I was reaching out with it, I was able to connect with people who didn’t regularly visit the dentist, and perhaps one-third of them didn’t even realize their insurance completely covered their exam.”

—Dr. Julia Heinrichs, Lenexa, Kansas

Providing access to care in rural America while also helping people overcome their dental phobias has been Dr. Julia Heinrichs’ plan of attack since she graduated from the University of Missouri–Kansas City School of Dentistry in 2008. Beginning with rudimentary digital platforms such as FaceTime and Skype, then moving on to more sophisticated ones such as MouthWatch, Heinrichs has used teledentistry to talk folks off the proverbial ledge, from calming moms’ fears to improving the dental IQs of people who were reluctant to visit the dentist.

“One of the first things I did was allow my patients to FaceTime and Skype with me, which usually resulted with me telling the patient—or his or her mom—that it’s not an emergency; we’ll see you tomorrow morning,” says the dentist. “That’s really what started my introduction to teledentistry.”

A new patient generator

As Heinrichs’ career advanced, so did her use of teledentistry. She recently sent her hygienist to a local company to perform dental screenings using the MouthWatch camera and software, which allowed her to communicate with Heinrichs back at the office.

“Some of the employees hadn’t been to a dentist in three or more years,” she recalls. “And some of the executives admitted that they simply didn’t have the time to make dental appointments on a regular basis.

“We informed the employees and executives of their oral health status, and I referred a few of them to dentists close to their homes,” says Heinrichs, who wasn’t concerned about booking every possible appointment at her practice. “It wasn’t necessary for me to bring in patients, but if a dental office wanted to, it could screen a company located close by, then perhaps work with its insurance to potentially get a lot of new patients.”

Teledentistry can, in fact, “be a great patient generator,” she says. “When I was reaching out with it, I was able to connect with people who didn’t regularly visit the dentist, and perhaps one-third of them didn’t even realize their insurance completely covered their exam.”
The American Teledentistry Association, founded in 2017, launched last year with the mission of increasing access to dental care through advocacy for and the implementation of innovative teledentistry guidelines and solutions. The organization is under the administration of Dr. Marc Ackerman, director of orthodontics at Boston Children’s Hospital and an assistant professor of developmental biology at the Harvard School of Dental Medicine.

“As a platform for patients, doctors and corporate manufacturers of teledentistry equipment, we interface and develop innovative solutions to solve critical problems,” Ackerman says. “And personally, in helping to develop public policy, I’ve worked with at least seven or eight states, assisting them with the development of reasonable solid statutes for the practice of teledentistry.”

The organization currently has about 250 members, gaining roughly 20 new ones each week. Ackerman says 60% of the group’s members are practitioners, with the majority of them in new- to mid-career status; 15% belong to academic and trade groups; and 25% are corporate entities such as dental service organizations.

“People who readily adopt new technology and workflows are embracing teledentistry but, as you know, there’s always a lag in terms of when the midstream people will accept it,” he says. “There are many distinctive cases that perhaps practitioners are unaware of where its techniques can be beneficial to both them and their patients, and we’re addressing that.”

For more information, visit americanteledentistry.org.
Teledentistry’s Top Players
These companies got an early lead in developing technology used in remote dentistry applications.

**MouthWatch**
TeleDent, MouthWatch’s teledentistry platform, enables patient data, clinical information, intraoral images and videos to be shared live or recorded and stored for later review. Secure, cloud-based software takes care of HIPAA-compliance for dental teams and referral networks. Information: mouthwatch.com

**Denteractive Solutions**
The communication and engagement platform allows dentists to communicate and collaborate with patients through a HIPAA-compliant, web-friendly mobile interface. Information: denteractive.com/for-dentist

**OperaDDS**
OperaDDS offers an end-to-end suite of communication tools, including teledentistry forms with which dentists can collect photos and videos to triage cases from patients in minutes. The teledentistry forms package also includes an online new-patient intake packet that writes back to the patient chart, eliminating data entry and errors. Information: operadds.com/teledentistry

**Philips**
Sonicare Teledentistry Solutions enables licensed dentists to provide consultations to consumers who are concerned about their teeth or have post-treatment questions. Philips is also working on functionality that will enable dentists to link with patients with remote dental monitoring. Information: philipsoralhealthcare.com