Teledentistry as a Tool for Health Care Transformation

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Teledentistry is a valuable technology tool that supports dental professionals in improving access to oral health care. Technological infrastructure, workforce availability, staff readiness, reimbursement, and patient population served must all be considered when implementing teledentistry.

Teledentistry and North Carolina

Health technologies are transforming how people receive care from their providers. From electronic health records and patient portals to medical devices and artificial intelligence, technology supports health care accessibility and affordability [1]. Telehealth must be considered among the top technological advances that connect health care providers with patients. In dentistry, this collection of digital tools to support connection is known as teledentistry [2, 3]. It allows dental providers to extend their reach and improve access to oral health services.

In North Carolina, many communities face challenges with access to oral health care. Thirteen percent of kindergartners have untreated tooth decay, with American Indian (55%) and Hispanic (52%) children more likely than White children (30%) to experience tooth decay [4]. Additionally, 21% of North Carolinians over age 65 have lost all of their natural teeth [4]. As of 2014, 36% of adults in North Carolina have not visited a dentist in the past 12 months, a task that may be especially difficult for pregnant persons in North Carolina [4]. This access-to-care crisis is exacerbated by the shortage of dental health professionals in 93 of 100 North Carolina counties [5]. Of dentists in North Carolina, only 45% accept Medicaid insurance, commonly due to the very low reimbursement rates [6].

North Carolina is investing in teledentistry to address challenges with access to and cost of care for its communities. Even before the COVID-19 pandemic, several academic institutions hosted two symposiums (in 2018 and early 2020) focused on coalition-building as well as demonstration of and alignment around teledentistry for the state [7, 8]. The building energy around teledentistry collided with the pandemic public health emergency, necessitating the need for providers to communicate virtually with their patients and get reimbursed for providing dental care through teledentistry. NC Medicaid released temporary billing guidance for use of real-time audio/video (synchronous) and store-and-forward (asynchronous) means of providing dental care, namely limited oral health evaluations [9]. As of 2024, Medicaid reimbursement remains in place for provider-to-provider communication via teledentistry methods only [10]. Many dental providers mobilized use of teledentistry during this time, including a considerable effort to divert dental emergencies away from an emergency department focused on controlling the pandemic [11]. In 2021, North Carolina established teledentistry standards and expanded the scope of practice for dental hygienists through Senate Bill 146 [12], which provided a strong foundation for the use of teledentistry to improve care access. North Carolina continues to find innovative ways to use these technologies to provide care in rural areas, in schools, for special needs populations, and to manage oral lesions [13–16].

While North Carolina paves the way for using teledentistry, the previously described dental workforce shortage, limited Medicaid reimbursement, and community inequities prevent providers from utilizing it more widely. This merging of advancing technology, local trailblazers, and need for improved care access creates a space for innovation to occur.

Teledentistry and the COrHT Initiative

Success with teledentistry implementation is showcased in the recently completed Community Oral Health Transformation (COrHT) Initiative in North Carolina, launched in 2022 [22]. The initiative engaged multiple stakeholders across the state bringing together dental professionals, community partners, and funders all dedicated to identifying and implementing strategies to address the widespread challenges in oral health care delivery. Initiative partners CareQuest Institute for Oral Health, North Carolina Oral Health Collaborative, and the Blue Cross and Blue Shield of North Carolina Foundation aimed to provide education, testing grounds, and financial support for dental clinics to embrace an equitable, integrated, and accessible model of

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care that can lessen disparities within the state.

Before the COrHT Initiative began, initiative partners convened a diverse group of oral health experts and leaders were selected to better understand the current health care landscape within the state and strategies to best address current barriers to utilizing teledentistry. This group was critical in informing the initiative aim before promoting the opportunity to potential participants. The group identified workforce availability, technology, training support, and reimbursement as current barriers for many dental practices to implement teledentistry. This information helped to inform initiative activities oriented around administrative and care changes to increase the adoption of teledentistry.

During the application process, the initiative partners conducted a thorough assessment of utilization of teledentistry services. They evaluated each application based on several criteria, including the frequency and types of teledentistry interactions, the technology platforms used, and the effectiveness of these services in increasing patients' access to care. For applicants who did not provide teledentistry services, their readiness to implement teledentistry was assessed by looking at staff and leadership buy-in and current infrastructure. By analyzing these factors, the initiative team was able to select 12 safety-net clinics to participate and provide insights into their effective use of teledentistry.

The initiative provided a comprehensive approach to supporting the adoption and increased utilization of teleden-

tistry. Supports included the following elements to ensure initiative participants were well equipped to engage with patients remotely:

Education: virtual instruction was provided to calibrate basic knowledge about teledentistry across initiative participants.

Workflow resources: example workflows were provided to initiative participants to help illustrate the integration of teledentistry technology into existing clinical processes.

Infrastructure development: grant dollars were available to support expenses including technology and equipment upgrades or aid for staff positions that directly support innovations such as teledentistry.

Peer to peer networking: consistent engagement opportunities to share challenges and best practices with teledentistry.

Data insights: teledentistry metrics were identified and reported on by initiative participants to monitor telehealth utilization. Metrics were displayed within interactive digital dashboards to provide timely insights into progress. Teledentistry has become a vital service for providing care to patients remotely. The COrHT Initiative selected a diverse group of participants with experience in teledentistry. This range of experience enriched discussions across participants and fostered a collaborative environment that advanced progress with teledentistry across the state of North Carolina.

At the beginning of the initiative in July 2022, 4 of 12 clinics offered teledentistry services, and by the end of the implementation phase in July 2023, 8 of 12 had at least attempted teledentistry. There was an increase in the number of teledentistry visits from baseline (July 2021 to June

2022, before the initiative) through the end of the initiative. At baseline, participants totaled 448 teledentistry visits and during the initiative (July 2022 to July 2023), they totaled 1,463 teledentistry visits. Teledentistry was used primarily for asynchronous preventive encounters, including children's initial dental appointments, school-based programs, and asynchronous dental exams.

Teledentistry helped to increase access to care for many initiative participants and their patients. While not all dental procedures can be performed remotely, participants shared that it is an essential tool for improving the oral health of patients and ensuring patient care needs are addressed appropriately and in a timely manner. Many participants felt that the increased focus on teledentistry through the initiative, the ability to purchase new equipment like intraoral cameras, and training for all care team members gave a renewed sense of engagement.

Teledentistry and Transformation

While the COVID-19 pandemic served as impetus for expansion of teledentistry and telehealth overall, the trajectory has normalized the technology without significantly disrupting the care delivery landscape. Telehealth is a mainstay, yet consumer demand did not serve as a driving force to fully reset norms of care delivery. Regardless, the role that health technologies like telehealth continue to play in growing and easing access to care and enhancing communication and exchange of information cannot be overlooked. Health technologies act as a force multiplier in these processes, helping combat frequent challenges such as inequity and workforce shortages [17].

The North Carolina Department of Health and Human Services names advancing health while "meeting people where they are" as a priority in its 2024–2026 strategic plan and identifies expansion of telehealth access and use as a tactic [18]. Expansion of telehealth to promote equitable access to care would be supported by expanding coverage of teledentistry beyond peer-to-peer consultation. Allowing for synchronous and asynchronous communication between dental providers and patients can improve access, add convenience, and reduce costs [19].

In a qualitative study by the Oral Health Workforce Research Center that evaluated state teledentistry policy and practices following the COVID-19 pandemic, a recommended step for improving utility of teledentistry is leveraging the abilities of the entire dental care team for workflow efficiencies [20]. North Carolina has taken recent steps supporting oral health workforce optimization by updating scope of practice for dental hygienists and allowing for more opportunities for access to preventive oral health services in community- or school-based and mobile programs. The important step was accomplished by collaboration between stakeholders like the North Carolina Oral Health Collaborative, North Carolina Dental Society, North Carolina Dental Hygienists Association, state legislators, and others to update policies through legislation. Workforce optimization should be a consideration with expanding coverage of teledentistry to grow access to care.

In addition, teledentistry can play a role in a whole health approach. Recommendations from the North Carolina Institute of Medicine's Oral Health Transformation Task Force identify the opportunities for teledentistry to enhance integration of oral health within the broader health care system [21]. Existing coverage and reimbursement of teledentistry for peer-to-peer communication can be leveraged to support growth in interdisciplinary communication and person-centered care.

Patient and provider experience should also shape policy considerations. While data collection continues and the COrHT Initiative has not been fully evaluated, indications show receptivity to broader utility of teledentistry among participants. The number of participants in the initiative using teledentistry doubled. Qualitative insights reflect that increased adoption was enabled through grant-funded infrastructure investments, education, training, and peer engagement.

As we note, North Carolina has strong collective experience in exploring the range of benefits and uses of teledentistry. The COrHT Initiative adds to the database of teledentistry insights that can continue to shape policy considerations. NCMJ

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