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ADVANCING THROUGH INNOVATION

Global pandemic and the rise of teledentistry

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1 | PROBLEM

Before the pandemic, teledentistry was in its infancy, officially permitted in only a few states. COVID-19 arrived and changed the landscape, halting in-person dental care except for emergencies. Dentists and patients were instantly disconnected, thrusting teledentistry into the spotlight. Additionally, with clinics closed, dental education live-patient experiences paused. Educators were forced to implement remote learning and find meaningful clinical experiences for students to bridge the gaps in the curriculum. Could high-fidelity simulation exercises teach telehealth foundational skills to support dental students as they become comfortable with this mode of care? Could this be created and implemented in a timely fashion as part of a summer rotation?

2 | SOLUTION

To answer these questions, the Simulation Team, in cooperation with the Innovation Team, developed a series of synchronous teledentistry encounters using live actors as patients. Three cases were generated as new patient encounters and addressed patients experiencing (1) post-operative sensitivity, (2) stress-triggered TMD, and (3) Primary Herpetic Gingivostomatis. These cases were designed to have features amenable to a teledentistry visit. Students were provided with a suggested checklist of key points to address during a teledentistry encounter, a brief patient note containing pertinent medical and dental history, and access to the patients via a video-conferencing platform.[1] Third-year dental students were tasked with 2 time-limited (8 minutes) patient encounters in which they were expected to evaluate the patient, provide a differential diagnosis, and introduce the next step in care. Prior to the simulation experience, students were asked to complete a survey covering their impressions of teledentistry and comfort level leading a teledentistry encounter.

A faculty member concurrently evaluated the students using a rubric designed to assess teledentistry encounters. Following each visit, immediate feedback was provided by the faculty observer using the Plus/Delta model. All encounters were recorded. In addition, 3 weeks after the exercise, students reviewed their videos and rated their performance. During a full class debrief, students were once again asked to complete the short survey of impressions and comfort level.[2,3]

3 | RESULTS

Preliminary analysis of data focused on the level of comfort the students reported, pre- and post-simulation. Ninety-three (n = 93) students completed both surveys with 5% attrition. For the pre-survey, 63 students (64%) reported some level of discomfort ("Slightly"/"Very" uncomfortable). Following the exercise, 21 students (23%) reported

TABLE 1 Numbers (percentages) of students declaring comfort level of "Slightly/Very" uncomfortable" pre-simulation and post-simulation

Comfort Level	Pre-simulation Survey (n = 93)	Post-simulation Survey (n = 93)
"Slightly"/"Very" uncomfortable	63 (64%)	21 (23%)

An increase of self-reported comfort level is observed post-simulation.

continued discomfort with the idea of leading a teledentistry visit (Table 1). The students were asked to provide a unique tracking code. This code allowed the pre- and post-responses to be analyzed. Overall, matched pairs (n = 76) reported a level of comfort one step higher on the agreement scale on the post-survey than on the pre-survey (average = 1.3 on a 5-point scale).

From pre-experience surveys, students anticipated their discomfort with teledentistry. Post-experience surveys revealed that their comfort level improved. This rapidly created simulation exercise provided opportunities to teach and test telehealth practices as our profession considers expanding remote delivery of care in the time of COVID-19. Furthermore, these simulated encounters enabled the Innovation Team to study the feasibility of teaching as well as implementing telehealth into its pre-clinical and clinical educational models.

REFERENCES

1. American Health Information Management Association (AHIMA). Telemedicine Toolkit. AHIMA Web site. https://my.ahima.org/store/product?id=64755. Accessed August 3, 2020.
2. Klair M. The mediated debrief of problem flights. In: Dismukes RK, Smith G, eds. Facilitation and Debriefing in Aviation Training and Operations. London: Routledge; 2000:72-92.
3. Patel SA, Halpin RM, Keosayian DL, et al. Impact of simulated patients on students' self-assessment of competency in practice of geriatric dentistry. *J Dent Educ*. 2020 May 11. https://doi.org/10:1002/jdd.12176