



Pandemic-driven global dental care, education, and training

Dental education and dental training have been dynamic since their inception. As change is inevitable, dentistry has significantly morphed into its current form through technological innovations, changes in societal expectations, as well as newer teaching and training philosophies. Prior to early 2020, it seemed as if nothing would interrupt this ever-accelerating pace of change. The COVID-19 pandemic suddenly altered that pace for good, as the world came to a standstill. Dental education, training, and care followed suit. There was an urgent need to learn about COVID-19, discern its impact on dental education and practice, and adapt to the crisis. As oral health care providers, always working in close proximity to the orofacial complex, we are amongst the most vulnerable to this respiratory virus. Therefore, there was an urgent need for preventative methods and personal protective equipment (PPE) to sustain and treat our dental patients. Guided by the Centers for Disease Control and Prevention (CDC), dental practitioners in the US returned to work with the added armamentarium to safely treat patients without increasing the risk of transmission of the virus.^{1,2} As dental educators, we had to ensure the readiness of our students for dental practice in the midst of this pandemic, armed with new skills, to be able to safely treat their patients upon graduation.

Dental educators throughout the world began to devise new ways and means to deliver safe and appropriate dental care to patients and incorporate this novel methodology into the education of dental students. Traditional training techniques, as taught, could no longer be implemented, due to masking, social distancing, and upgraded disinfection guidelines developed due to COVID-19.³ Every dental school, hospital, and dental clinic considered alternatives and started implementing new and modified teaching and training protocols, as well as the physical changes to patient care areas that made the best sense.

Didactic courses and certain aspects of clinical training could be safely managed through digital conferencing tools. Virtual lectures became instant replacements to in-person classroom instruction and were largely successful, as faculty and students learned how to use these tools, adapt to new teaching methodology, and always keep an eye on the chat. The same distance learning technology permitted add-ons such as virtual proctoring, virtual presentations, and small group meetings. In other words, we created a virtual replication of the educational settings that existed prior to the current crisis. Even didactic and clinical competency examinations were modified and converted to virtual clinical competency evaluations (VCCE). These initiatives permitted students to complete their requirements and progress to their D4 year or to graduate.

Mupparapu and coworkers⁴ discussed a rapid x-ray training technique for the incoming clinical students during the peak of the pandemic and presented findings that showed that, despite missing some valuable time, students were able to receive equivalent training and develop clinical skills that prepared them to enter the dental school clinics and successfully treat patients. Emphasis on panoramic radiographs, extraoral bitewing examinations, and using partial intraoral examinations limited direct patient contact while allowing proper diagnoses and treatment plans to be delivered. A combination of improved availability of PPE, greater knowledge of infection control related to COVID-19, and encouraging early results of safely delivered care allowed dental school clinics to shift from emergency-only care to elective procedures. Although clinic capacity was maintained at approximately 50% of the normal throughput, the addition of clinic sessions to each day and pairing students improved efficiency and permitted more patients to receive more treatment. What is perhaps most surprising is that we have adapted so well to these changes that we may continue their use, even as the immediate dangers of the pandemic subside.



Dental school clinics often serve otherwise dentally underserved populations. Through maintaining access to care in challenging circumstances, as well as providing an ongoing high-quality dental education to our students, we have continued our mission while demonstrating innovations that will likely prove to be long-lasting and enhance dental education. In a nutshell, the dental profession has certainly adapted to the challenges created by COVID-19.

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