Teaching emergency medicine in a dental school during the time of COVID-19

Nagi M. Damien DDS, MD, FACS | Douglas J. Chappell LP, RDA, ACLS-I, ITLS-I | Ransome van der Hoeven PhD

1 Department of Oral Maxillofacial Surgery, The University of Texas Health Science Center at Houston – School of Dentistry, Houston, Texas, USA
2 Department of Diagnostic and Biomedical Sciences, The University of Texas Health Science Center at Houston – School of Dentistry, Houston, Texas, USA

Correspondence
Ransome van der Hoeven, PhD, Department of Diagnostic and Biomedical Sciences, The University of Texas School of Dentistry, 7500 Cambridge, Houston, TX 77054, USA.
Email: ransome.vanderhoeven@uth.tmc.edu

1 PROBLEM

Medical emergencies can occur at any time in the dental clinic; therefore, it is vital the entire dental team must be properly trained to manage any scenario. At the University of Texas School of Dentistry at Houston (UTSD), dental (Doctor of Dental Surgery [DDS]) and dental hygiene (DH) students take courses in the management of medical emergencies. Emergency procedures II, is a fourth-year DDS course that brings together all of the individual medical emergency procedures that have been presented throughout their dental education. Students in small groups are required to attend a 4-hour scheduled problem-based learning session that covers basic management of various medical emergencies and a lab that focuses on setting up an emergency cart and hands-on practice of ventilation, intubation, and the administration of intravenous (IV) lines. Dental Emergencies is a first-year DH course comprised of a didactic component that entails a series of presentations on the management of various medical emergencies. This is followed by a lab that assesses students’ handling of mock emergencies on a SimMan. As the pandemic began to spread in mid-March, a stay-at-home order required our institution to transition to remote learning. We were challenged by the absence of learners in the classroom and the inability for them to participate in simulation and hands-on activities.

2 SOLUTION

Challenges with in-person delivery of the Emergency Procedures II course were addressed by hosting problem-based learning sessions and live demonstrations of starting an IV (Figure 1) and airway management using manikins (Figure 2) via WebEx to students in small groups. Prior to attending the sessions, students were required to view Malamed videos on basic management of various medical emergencies provided on Canvas. Problem-based discussions were created on the content of the videos. At the completion of the sessions, students were required to submit a written report giving 3 important concepts that they learned.

Didactics in the Dental Emergencies course were presented via WebEx and an exit quiz was administered using Canvas after the completion of each lecture. Open book case-based exams administered on Canvas replaced proctored multiple-choice question exams. The simulation sessions were substituted by virtual emergency training sessions. All students were required to attend the first session, which provided an overview of components of a sound medical emergency plan, basic emergency drugs and equipment, and management of various medical emergencies. This session was followed by small group sessions focusing on live demonstrations of airway management, cardiopulmonary resuscitation (CPR), use of an automated external defibrillator (AED), and the contents...
of a crash cart. Exit quizzes were administered via Canvas after the completion of the large and small group sessions.

3 | RESULTS

Students provided positive feedback in the course evaluations with respect to the transition to the online format and the delivery of material. However, they regretted the inability to participate in simulation and hands-on learning. Good time management and organization, sequencing of content, and the availability of multiple Web-cameras were key factors that contributed to the successful delivery of content for remote learning.

ACKNOWLEDGMENTS

We thank Dr. Richard Halpin, Mr. Gordon Finnerty, and Mr. Darrel Gonzales of the Office of Technology Services and Informatics, UTSD for helping to set up, monitor, and record the WebEx sessions. We also thank Ms. Anita
Rodriguez (Department of Diagnostic and Biomedical Sciences) for assisting us during the WebEx sessions and Dr. Amity Gardner (Department of General Practice and Dental Public Health) for providing the schedules and her support.

CONFLICT OF INTEREST
The authors declare that they have no conflict of interest.

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How to cite this article: Damien NM, Chappell DJ, van der Hoeven R. Teaching emergency medicine in a dental school during the time of COVID-19. J Dent Educ. 2021;85(Suppl. 1):899–901. https://doi.org/10.1002/jdd.12322