



Conduct of virtual summative anesthesiology Objective Structured Clinical Examination during the COVID-19 pandemic

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Received: 5 June 2021 / Revised: 5 June 2021 / Accepted: 9 June 2021 / Published online: 6 July 2021
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Keywords teleconferencing · high-stakes · postgraduate · medical education · simulation

To the Editor,

One month before the May 2021 Masters of Medicine Anesthesia Part B Objective Structured Clinical Examination (OSCE) held by the National University of Singapore, an onslaught of COVID-19 infections among healthcare workers in healthcare institutions (HCIs) was reported. This resulted in tightened regulations prohibiting cross institution movement. The intended OSCE format consisted of candidate rotation through twelve 12-min stations over two days; this included history taking from simulated patients (SPs), viva discussion of anesthesia and medical cases, interpretation of investigations, hands-on demonstration of equipment, and crisis management using a simulation trainer. With nearly 30 candidates from all the HCIs, it was a challenge to conduct the OSCE in accordance with COVID-19 measures. In fact, the previous year's examination was postponed by six months to be conducted face-to-face after COVID-19 restrictions were lifted. Teleconferencing is a novel format for a high-stakes OSCE, and extra consideration was needed to convert it into a coherent assessment strategy

whilst maintaining exam validity, reliability, feasibility, and cost effectiveness. In this letter, we describe how this high-stakes OSCE was conducted within the regulatory and examination framework.

To preserve examination validity,¹ the tasks examined in the original format were broken down into elements, and if they were unsuitable for translation to the teleconferencing platform, they were modified or replaced with related elements. For example, in the crisis station, candidates are usually assessed via hands-on management, on skills such as situational awareness, quick assessment of differentials, appropriate resuscitation steps, and team communication. In the modified station, a video-recording of evolving patient parameters was played whilst candidates verbalized their thoughts. To ensure examination reliability, examiners role-played candidates of varying ability, which assisted in fine-tuning the delivery of questions and scoring scheme. Simulated patients were trained to deliver concise lines, and scenarios were trimmed to allow for teleconferencing delays during conversations. Contingency plans were also rehearsed in event of technical failures.

To avoid cross institution interaction, 22 candidates from two HCIs reported at staggered timings to the main OSCE site on university campus, whilst four candidates from the HCI most affected by the COVID-19 outbreak were hosted together off-site. All examiners and SPs were off-site and participated from their own locations. Candidates were quarantined individually before and after the examination, and to minimize cross contamination, each candidate took all OSCE stations in a single allocated physical room with teleconferencing capabilities. All candidates were admitted to a common virtual meeting room, whilst examiners and SPs of different stations waited

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within their respective virtual breakout rooms. Before each station, candidates sat outside their examination room reading Candidate's Instruction sheets, whilst administration staff admitted candidates into the appropriate breakout room. Timekeeping announcements were communicated via the public announcement system, as well as over text in virtual breakout rooms and mobile phones for examiners and SPs. Digitised scoresheets were used to facilitate marking and real-time document sharing for adjudication.

Despite the preparation, there were delays in the coordination of breakout room rotations, and two events of computer failure occurred, requiring the second remaining examiner to take over from the primary examiner. Fortunately, the examination continued without compromise to its rigor and integrity. At the time of writing this letter, the candidates' performance in this examination has yet to be seen, as the borderline regression analysis is not yet complete.

The COVID-19 pandemic has been a long fight, and major examinations cannot be postponed infinitely, as it affects residency progression and senior staff manpower. This index experience has shown that it is possible to

conduct a rigorous, reliable, and valid post-graduate OSCE via teleconferencing, despite COVID-19 social restrictions.

Acknowledgements We would like to acknowledge the contributions of Ms Sim Choon Yian and her team from Division of Graduate Medical Studies, National University of Singapore, in examination planning as well as smooth execution.

Disclosures None.

Funding statement None.

Editorial responsibility This submission was handled by Dr. Stephan K.W. Schwarz, Editor-in-Chief, *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*

Reference

Academy of Medical Educators. Professional Standards (3rd edition). Cardiff: Academy of Medical Educators; 2014.

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