Undergraduate Medical Education Post-Covid: Enhancing the Return to Routine

Kapilan Panchendrabose MSc [*†] Alexa Hryniuk Ph.D. [‡§]

Abstract

The COVID-19 pandemic has reshaped all aspects of medical education worldwide. Medical schools have adapted in various ways to provide students with an educational experience that is unimpeded by the current pandemic circumstances. The aim of this commentary is to highlight the various modifications that have been made to medical education for pre-clerkship medical students attending the University of Manitoba Max Rady College of Medicine and how those changes can enhance the future of medical education.

Conflict of Interest Statement: The authors declare no conflict of interest.

The COVID-19 pandemic is a global health crisis that has affected all aspects of life including medical education. Most of the published literature with regards to medical education has been focused on observations and analyses during the pandemic, with several Canadian medical schools discussing their efforts to accommodate changes in medical education during these unprecedented circumstances.[1–3] This pandemic led to rapid adaptation and changes to undergraduate medical education curricula and has fostered/augmented online methods of teaching and learning, career development, and other curricular activities online. Despite most Canadian post-secondary institutions are preparing for a complete return to in-person teaching, will the lessons and positive pedagogical outcomes learned during the COVID-19 pandemic be incorporated into undergraduate pre-clerkship medical education?

At the University of Manitoba (U of M) Max Rady College of Medicine, medical students in the pre-clerkship (also known as pre-clinical) phase of their training became acclimated to a blended learning environment during the COVID-19 pandemic. This included online learning for all whole group learning sessions, tutorials and professional development sessions, while all clinically related sessions and hands-on anatomical gross laboratories remained in-person with proper safety measures for students, faculty and staff. Recent studies in educational fields have shown that a blend mode of curriculum delivery, similar to that adopted by the U of M, has several benefits to both teaching and learning.[4,5] Prior to the COVID-19 pandemic, Pei and Wu conducted a systematic review demonstrating that online delivery of undergraduate medical education in nine countries, not including Canada, is non-inferior to traditional in-person learning.[6] Additionally, they suggested that a blended learning environment containing both online and offline modalities maximizes student education.

Examinations were also changed to be conducted off campus and online with strict guidelines to minimize any infractions by the test taker. These changes provided advantages to students that would have been absent in the traditional curriculum. Medical students at the U of M have informally self reported feeling less test anxiety and more comfortable in their own test taking environment, which agrees with previous findings.[7] Other benefits to online examinations for students living off campus include saved commute times, reduced travel-related stress (i.e., dealing with weather conditions, traffic and parking). Some disadvantages of off campus and online test taking includes complications due to poor internet connections, false infraction claims, and other unforeseen technological issues. However, with modifications to the technology infrastructure for students, most of these disadvantages can be eliminated to take advantage of the benefits of online testing.

Although some clinical skills components of the curriculum have remained in-person at the U of M, other institutions initially decided to change the method of delivery of these components to online instruction as well. Assessments of the efficacy of complete online de-

[*]Correspondence to: email@email.email
[†]Max Rady College of Medicine, University of Manitoba, Winnipeg, MB, Canada
[‡]Max Rady College of Medicine, University of Manitoba, Winnipeg, MB, Canada
[§]Department of Human Anatomy and Cell Science, University of Manitoba, Winnipeg, MB, Canada

livery of clinical skills required for Objective Structured Clinical Exams (OSCEs) is limited however, learning these skills through online modalities adjunctive to in-person learning has been investigated.[8,9] The advantages are similar to those of online examinations and include increased ease for clinician leaders to participate without the need to commute to campus. However, there are several notable disadvantages with when implementing clinical skill sessions online. Firstly, students may acquire insufficient training in physical examinations with the absence of in-person interactions. It may be more difficult to identify nuances during patient interactions due to camera and microphone quality. Students may also feel ill-prepared in their skills prior to direct patient interactions during their clinical rotations. Holding OSCEs online is another novel method which is currently not well investigated in the literature. Almost all clinical skills are conducted in person as a clinician and how learning clinical skills solely online translates to mastery during clinical years requires further investigation.

The COVID-19 pandemic has caused for unprecedented circumstances which affect every aspect of life including medical education. Current attitudes and previous pedagogical evidence suggest that adaptations arising from this pandemic which may enhance traditional medical curricula based on their utility for students, faculty and staff. More research needs to be conducted to determine which online learning modalities are most efficacious to medical education and how to achieve an optimized balance between online and offline learning. Post-secondary institutions and health science faculties offering medical education may want to continue investing in the improvement of their online learning infrastructures to accommodate the permanent changes in the post-COVID era. This will hopefully contribute to greater learner success in the future.

References

[1] Mehta N, End C, Kwan JCS, Bernstein S, Law M. Adapting medical education during crisis: Student–Faculty partnerships as an enabler of success. Medical Teacher. 2020;44(6):688-9.

[2] Fong J, Tien TL. Educational purgatory: Medical education in the era of COVID-19. British Columbia Medical Journal. 2020;62(7):244-6.

[3] Dhillon J, Salimi A, ElHawary H. Impact of COVID-19 on Canadian Medical Education: Pre-clerkship and Clerkship Students Affected Differently. Journal of Medical Education and Curricular Development. 2020;7:1-5.

[4] Jafri L, Majid H, Siddiqui HS, Islam N, Khurshid F. Blended learning mediated fostering of students' engagement in an undergraduate medical education module. MedEdPublish. 2019;8(2):57.

[5] Houssein S, di Marco L, Schwebel C, Luengo V, Morand P, Gillois P. Consequences of switching to blended learning: The grenoble medical school key elements. Studies in Health Technology and Informatics. 2018;1(247):356-60.

[6] Pei L, Wu H. Does online learning work better than offline learning in undergraduate medical education? A systematic review and meta-analysis. Medical Education Online. 2019;24(1):1666538.

[7] Stowell J, Bennett D. Effects of online testing on student exam performance and test anxiety. Journal of Educational Computing Research. 2010;42(2):161-71.

[8] Gormley GJ, Collins K, Boohan M, Bickle IC, Stevenson M. Is there a place for e-learning in clinical skills? A survey of undergraduate medical students' experiences and attitudes. Medical Teacher. 2009;31(1):6-12.

[9] Basnak JP, Nzekwu E, Chow M, Ortynski J. A digital peer-to-peer learning platform for clinical skills development. Canadian Medical Education Journal. 2017;8(1):59-66.