



Changes to Medical School Education Around the World in Response to the COVID-19 Pandemic



Kelly Nixon¹, Kristin Bredhold¹, Bhupal Bhetwal, Ph.D^{1,2}

¹College of Medicine, Marian University, Indianapolis, IN 46222

²Department of Physiology and Biochemistry, Marian University, Indianapolis, IN 46222

Introduction

- The COVID-19 pandemic has created a unique situation for medical education worldwide as traditional medical training is not compatible with social distancing guidelines.
- Curriculums, content delivery, and procedures across medical schools and governing bodies worldwide had to rapidly change to alongside rapidly adapting guidelines to ensure continuity of education for the future physicians of the world.

Objective

- Assess and compile responses to COVID-19 in medical education systems worldwide
- Present and compare strategies put in place by different states and countries

Methods

- 61 articles regarding medical education in the time of COVID-19 were compiled from online literature databases (PubMed, etc)
- Articles were sorted based upon state, country, and pertinence to pre-clinical vs clinical years of medical training
- A qualitative literature review of the articles was then performed to assess changes in medical education and curriculum across the United States and worldwide.

Discussion

With the exception of Singapore, which had pandemic preparedness plans in place due to previous experience with disease outbreaks, the undergraduate medical education systems of many countries around the world were not prepared for the changes brought on by a pandemic. As such, the global transition to online pre-clinical, and often clinical, medical education did not occur smoothly. In many countries, instructors lacked experience utilizing online platforms for content presentation resulting in the need to create entirely new content rapidly. Even areas with previous utilization of online technologies saw issues with transitioning the previously in person aspects of the curriculum onto a virtual format. Further the relocation of many students back to their homes led to universal frustrations as scheduling problems arose due to students being spread across multiple time zones. Additionally, in areas such as Australia, New Zealand, and the United Kingdom, where students were medical students were enrolled in gross anatomy classes, new technologies had to be implemented in addition to the development of supplemental instruction methods in order to fully address presented topics.

While the majority of the globe approached pre-clinical education with a transition to online education, nations were not as uniform when it came to students in the clinical years of medical education. For some nations such as Italy, rapid changes had to be made not only to continue medical education, but also to preserve the delivery of care to the population. In order to fill growing needs, Italy allowed for the early graduation of almost 10,000 senior medical students, an act that was followed by the United Kingdom, Turkey, and some schools in the United States. Similarly, Iran utilized medical students to assist with COVID response by allowing them to practice under the direct supervision of physicians rather than graduating early. Australia allowed students to remain in the clinical setting to help with the increased burden on the medical field as long as they were not working directly with COVID patients and Mexico allowed for students to work with Social Services. By and large most other countries suspended clinical rotations, choosing to either postpone them until after the pandemic or provide virtual alternatives to in person rotations.

Results

- Preclinical years:
 - Most countries transitioned all preclinical classroom training to a virtual format.
 - This transition did not occur with the same level of ease globally though as some countries were able to have rapid, uniform transitions due to previously constructed pandemic response plans, while others experienced difficulties due to a lack of planning, technology or logistics.
- Clinical years:
 - Different countries and regions responded with a variety of plans ranging from postponing clinical rotations to the early graduation of final year students.
 - In the United States, the AAMC and the Liaison Committee on Medical Education determined that students were nonessential workers and therefore made the decision to stop all direct medical student-to-patient contact.

Conclusion

- The COVID-19 pandemic significantly impacted medical schools worldwide as pre-clinical and clinical curriculum have largely transitioned to remote learning platforms.
- Pre-clinical student concerns to remote learning included both positive aspects, as related to increased schedule flexibility, ability to explore new learning resources, and time to focus on wellness, and negative aspects, as related to the loss of clinical experiences in the core curriculum, reduced impact of laboratory courses, and heightened feelings of anxiety and isolation.
- Clinical students noted similar opinions to the remote learning environment, with additional concerns regarding exposure to specific specialties, such as dermatology or surgery, and impact on future residency applications.