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Perspectives of medical students on local medical education during COVID-19

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INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic has led to major disruptions globally. Cessation of non-essential services and overseas travel bans have been implemented throughout the world. Medical education is not spared. Clinical postings are suspended and medical students are barred from direct patient contact.⁽¹⁾ However, this is not new to us, as we have experienced several disease outbreaks since the severe acute respiratory syndrome (SARS) epidemic in 2003 and the H1N1 pandemic in 2009. The SARS outbreak highlighted a unique set of challenges that accompanied the delivery of medical education worldwide during a epidemic. To reduce the transmission of infection, patient contact and didactic lectures were prohibited.^(2,3) This curtailed learning for students, and medical schools responded by implementing measures to minimise disruption to their curriculum.⁽³⁾

After the H1N1 pandemic in 2009, local educators proposed a contingency plan for our medical education system if similar containment measures are implemented in future outbreaks.⁽⁴⁾ After more than a decade, the preparedness of medical schools in continuing medical education is being tested once again. It is imperative to have viable alternatives for this ever-present risk of disruption to education. Have we learnt from our previous experiences? As medical students who have recently graduated from Yong Loo Lin School of Medicine, National University of Singapore, we examined the measures implemented by the school through our observations and experience, and provide suggestions to cope with the current and future outbreaks.

WHAT WAS DONE FOR CLINICAL TEACHING AND EXAMINATIONS

The national Disease Outbreak Response System Condition (DORSCON) was raised to Orange on 7 February 2020 due to possible community spread, resulting in the implementation of enhanced measures such as the cancellation of large-scale events and inter-institution/external

activities. In response, medical schools in Singapore issued a circular to cease clinical rotations for medical students. Since then, lectures have been shifted online, while case-based learning and virtual simulations have been introduced to replace direct clinical exposure. Near-peer and alumni are also roped in to conduct small group online tutorials, with a mixture of case-based tutorials and revision on core topics, to supplement the school's efforts in continuing medical education. These tutorials focus on imparting clinical experience to fill the knowledge gaps.

Clinical examinations have been also disrupted. Final year practical examinations, which traditionally involve actual patients, have been replaced with simulated patients. This ensures that communication and history-taking skills are still assessed. The ability to detect abnormal signs, such as heart murmurs, breath sounds, abdominal or rectal masses, is assessed using models of body parts and the Harvey mannequin. This allows practical examinations to be conducted as realistically as possible, without sacrificing important clinical components, before graduation. The validity of the examinations has not been compromised, as the pass-fail criterion remains the same. Even though changes to the conduct of examination (such as substituting a standardised patient in place of a live patient) is necessary, students are reassured that standards would not be compromised and examinable domains will remain. This allows for a more objective assessment, as the same assessment criteria can be better applied with the same examination content for the cohort.

PROMISING ALTERNATIVES FOR MEDICAL STUDENT LEARNING

Our medical school has been flexible in modifying schedules, allowing holidays to be brought forward and postponing clinical attachments in hope of minimising loss of clinical exposure while monitoring the situation. However, this is only a temporising measure. Intermediate plans should be put in place and conveyed to students as early as possible, despite the uncertainties, to allay students' concerns, anxieties and fears regarding training disruption.

Furthermore, the focus of the clinical curriculum initially shifted to important topics such as public health, health literacy and ethics, where patient interactions are not required for teaching. These areas tend to be neglected by students, as they are deemed unimportant for assessment. However, in the current climate, they provide an excellent contextualised learning opportunity for students to witness the importance of having a good grasp of epidemiology and ethics first-hand. For example, real-life application of epidemiological studies could be demonstrated through the analysis of COVID-19 and its spread, and how it has played a major role in the surveillance and prevention policies implemented by our government. Furthermore, students can witness how justice, one of the key pillars of medical ethics, comes into play in equal and fair resource distribution in times of scarcity.

Teaching students to better appreciate the correlations (or links) between basic sciences and clinical medicine can be reinforced. A study has shown that self-explanation can be used as a tool to improve diagnostic performances because it helps students to achieve a more coherent mental representation of diseases (illness scripts).⁽⁵⁾ This helps students to synthesise clinical features into useful problem representations during history-taking, which improves their ability to compare and contrast key features in patients' presenting complaint.⁽⁶⁾ Following this, the school can teach students to generate a prioritised list of differential diagnoses. This can be taught by taking students through case-based clinical reasoning scenarios that illustrate an expert's thought process during a clinical encounter.⁽⁷⁾

The pandemic has hastened the process of incorporating technology into medical education. Along with it comes a 'new normal' – reduced exposure to actual patients and increased exposure to technology. Other than going online for traditional in-person teaching sessions, clinical attachments can also go virtual. With the Ministry of Health encouraging selected patients with chronic diseases to use video-consultations through secured platforms,⁽⁸⁾ participating in these telehealth sessions could be a good alternative to clinical exposure. As

consultation is conducted online, more students can ‘sit in’ as compared to actual clinic attachment, where only one or two students is present. This maximises learning opportunities from limited clinical materials. However, students will not be able to examine the patient clinically to fully appreciate the extent of clinical medicine. Careful consideration of patient autonomy and privacy is also important in the implementation of this alternative.

Collaboration between medical schools is vital and should be fostered in these times. Pooling of resources such as teaching materials, simulation software and other technologies would allow for a smoother transition from clinical teaching. One example is PIVOT MedEd,⁽⁹⁾ an overseas initiative that aims to gather resources across medical schools to facilitate clinical learning through an online platform. Medical schools can also consider collaborating with hospitals to improve technologies such as augmented reality and haptic simulation.⁽¹⁰⁾ This would replicate not only the visual perceptions of real-life experience but also sensations of physical touch. Such technology allows both medical students and junior surgeons to simulate surgical procedures that can further enhance their practical skills.

Lastly, we could consider implementing a bold but controversial measure – introducing medical students to the public health systems, such as staffing them to assist with contact tracing.⁽¹¹⁾ Not only does this help with reducing the manpower crunch, it also exposes medical students to the workforce, allowing them to gain invaluable experience without significantly increasing the risk of contracting the virus. However, the risk and benefits to both the student and community should be weighed before such measures are implemented.

Undoubtedly, the ‘new normal’ in medical education has its drawbacks. Changes beget uncertainties, but one thing remains unchanged over the years – no medical student will ever feel prepared enough to be a doctor immediately after graduation. The ever-daunting prospect that a patient’s life is dependent on our actions while under our care will drive every student and doctor to ensure that their learning is not compromised.

CONCLUSION

Clinical experience and patient interactions are vital in medical education. They cannot be fully replaced. Alternatives must be explored to ensure that medical students remain competent despite major disruption to clinical postings. Contingency planning, rather than reactive measures, must take place to prepare for scenarios such as an infectious disease outbreak, and this will be a recurring theme. Being at the crux of an evolving landscape also means a potential for breakthroughs in learning when medical students choose to embrace the challenges ahead. The use of technology in simulations and virtual reality is promising, and more should be done to enhance learning during these difficult times and to ensure its continuity after the pandemic, so that medical education can be pandemic proof.

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