Digitalising medical education: virtual ward rounds during COVID-19 and beyond

The COVID-19 pandemic necessitated a remodelling of medical education as medical students were removed from clinical placements and universities were closed. The response to this unexpected interruption to education was an increased use of online teaching resources and platforms. The reintroduction of medical students to hospitals requires careful consideration as new cases of COVID-19 infections remain prominent in the United Kingdom, and focused efforts are still required to ensure the R rate remains stable and below 1.

Imperial College London has used technology to assist medical education, recently reporting success conducting virtual ward rounds for medical students. Through the use of a Hololens headset worn by a physician carrying out the ward round, an entire cohort of students can watch a healthcare professional (HCP) talk to and examine patients remotely. Concurrently clinical educators are able to enhance learning by displaying virtual images of supplementary clinical material such as X-rays and blood results alongside the video of the doctor–patient interaction being streamed. This use of augmented reality enables a comprehensive clinical scenario to be represented in real time. In addition, virtual ward rounds can be recorded enabling universities to build a library of cases. This presents an opportunity to initiate international collaborations where students globally can benefit from an online bank of virtual ward rounds with a variety of conditions and rare presentations.

Ward rounds play an integral role in medical education, allowing students to conceptualise key information and develop clinical reasoning skills. Therefore, the use of virtual ward rounds to assist learning through and post the COVID-19 pandemic should be explored. Students can ask questions remotely, while discussing treatment and management options with a HCP to guide them through their learning. Through observation of doctor–patient interactions, students can identify non-verbal cues displayed by patients and discuss effective interpersonal skills employed by HCPs. Practical skills such as writing inpatient notes accurately and prescribing medications can be developed by directing students to take detailed notes while displaying relevant case information and drug charts. Virtual ward rounds also enable students to learn from a larger case-mix of patients than is otherwise possible in normal clinical teaching. Other benefits include a reduced risk of infection transmission as well as less intimidation experienced by patients. Ward rounds typically occur with a group of students and HCPs collectively reviewing a patient. This can consist of over 10 individuals, but the physical presence of solely essential HCPs has the potential to improve patient care and satisfaction.

Various limitations of virtual ward rounds must be acknowledged, including the lack of direct patient contact and ability to practise physical examination skills, such as palpation and percussion. These skills can be learnt with bedside teaching during ward rounds, and the opportunity to practise these skills is necessary to enable accurate patient assessment. Although students can learn from observing doctor–patient interactions on virtual ward rounds, honing socialisation skills also requires direct patient interaction. It has been further suggested that these skills are best taught in small group discussions and by providing structured feedback about student performance. Virtual ward rounds would involve an entire cohort of students, providing less opportunity for students to directly interact with patients and to reflect on their performance. Importantly, patient confidentiality must also be maintained by securing informed consent from patients in advance of the ward round and by reminding medical students that the video streamed on their electronic devices must not be viewed by anyone other than themselves.

Innovations bring new potential, and while virtual ward rounds are currently a promising prospect, it would be crucial to measure its efficacy through a rigorous study identifying all potential benefits and limitations of implementation. Despite COVID-19 leading to an unprecedented interruption to medical education, it has provided an opportunity for innovative technologies to be applied to the educational context.