

Clinical Skills Updated During the Pandemic

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ABSTRACT

At the time of writing this article, we are at 23 Million COVID-19 cases worldwide, with just over 800,000 dead (Coronavirus Update (Live): Worldometer, 2020). The word Pandemic is becoming an idiom synonymous with a crisis that is shaping global healthcare systems. It shouldn't be a word to describe solely the current epoch rather, how it will shape the societies of the future. Similarly, to when the term once had a different meaning "pandemos", meaning "all the people". The Greek physician Hippocrates became the first to give this term a medical association. Society as we know it is slowly morphing and adapting to a state of existence never anticipated before. This showcases the strength of mankind that is, adapting to changing environments. If we are good at one thing, this is it: our resilience and primordial genes assist us to adapt around situations and scenarios to continue to build ourselves and others, for mutual merit or for crafty degeneration. Ever since the efforts in Wuhan to combat the virus circulated across the internet, healthcare professionals have been applying their knowledge and skillsets in a new environment and at pace which has never been programmed into a clinical skills training session. A new dimension to the practice of medicine was emerging in the harshest conditions known to healthcare professionals. Extremely long hours and the inadequacies of personal protective equipment's, not only tested the tangible manufacturer's capacity of producing protective materials under huge demand, but also the true grit of each and every individual who worked in a hospital and especially the ones that were at the bedside of a deteriorating Covid-19 patient.

Keywords: COVID19; Pandemic; Clinical skills; Medical education

Abbreviations: PPE: Personal Protective Equipment; AAMC: Association of American Medical College; USMLE: United States Medical Licensing Examination; NBME: National Board of Medical Examiners; ERAS: Electronic Residency Application Service

The Decline of Traditional Skills Training Philosophy

The countless testimonies from the frontline paint the picture of a truly unprecedented fight against an enemy, invisible to the naked eye but capable of inducing devastating effects to memories of innumerable families around the world [1,2]. Since the first cases were treated in December 2019 in Wuhan, we have come to recognize that this is not a just a war with a strategy to win but, a Le Mans-like endurance race continuously establishing new ways and tactics to adapt into an unknown period into the future to maintain life and the many cycles of societies.

There was some optimism on the horizon when governments around the world measurably announced a structured plan to ease lockdown.

In the UK, a lockdown relaxation methodology provided some hope among public and also for the exhausted healthcare professionals [3]. We now know that despite cautious plans to relax lockdown and containment of cluster breakdown of the virus, there is still a high probability were activities of normal societal living may once again come to arrest. This is one area where higher education institutions and enterprises are forced to think 'outside the box'.

Traditionally most, if not all, forms of education followed a face to face, brick-and-mortar trend which was rooted in centuries of scholastic history. Although termination of education is not an option, all educational institutions are pondering on the idea of amalgamating digital technologies into their curriculum delivery. All industries suffered during the peak of this pandemic, including providers of education

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and skills training. The fear of further pandemic relapse forced all teaching activities to be suspended. However, many adapted through the merit of their prior technological capabilities to embrace an online training provision that is although, imperfect yet continuously improving, to sustain delivery of education and skills training [4].

Nevertheless, challenges remain along with delivery of skills and practical training. This is the known limitation of online training and how to measure the tangible nature of learned psychomotor skills associated with clinical skills and skills training. In a healthcare environment, clinical rounds have been the foundations of learning the art of bedside clinical skills. Close supervision and peer-observations were once

the epitome of acknowledgement of crafting perfection of a clinical skill. Although theory examinations can be assessed through timed online tests and through socially distanced examinations. The practicalities of performing clinical skills training and skills assessments required a ground-up review. In several countries, they have recognised the challenges associated with conducting clinical case examinations including social distancing measures, availability of personal protective equipment and more broadly travel restrictions of candidates [5]. Hueston and Petty (2020) explores this further in their observation on the impact of the pandemic on medical student education in Wisconsin. See Table 1, extracted from Hueston and Petty (2020) [6].

Table 1: Effect of COVID-19 on medical student education.

COVID 19 Restrictions	Effect on student Education	Medical school Responses
Safer at home order for state	Students no longer permitted to come to campus for learning activities	Shift from live groups and lectures to virtual teaching
	Students barred from clinical activities at hospitals and clinics	Clinical rotations replaced with virtual learning, clinical simulations, telehealth exercises
Shortage of PPE	Students not Permitted to Participate in some procedures and surgeries or care for patients with conditions requiring PPE, including proven or suspected COVID 19	Virtual presentations of procedures and clinical cases substituted where appropriate students included when servicing as key provider (eg. assistant) on case or adequate PPE for safety
Suspension of USMLE testing with limited phased in of National testing sites	Testing sites not readily available for step 1, step 2 CK (clinical knowledge) and for Step 2CS (clinical skills) of USMLE examinations	Medical schools working with AAMC and NBME to develop alternate testing sites at medical schools student clinical rotation adjusted to provide time for students to study and take these high stakes examinations
The newly formed “ work Group on Medical students in the class of 2021 Moving across institutions for post graduate Training “ established by the Coalition for Physician accountability provides new guidance for student away rotations residency application timeline, and residency interview process for 2020-2021 year	Away rotations should be discouraged with exceptions for students who have speciality interest and don't have access to clinical experiences with residency program in their school system and students for whom Away rotations are required for graduation or accreditation purposes	school with work with students to Communicate expectations regarding away rotation end and, when they are needed, encourage a limited number of Away rotations, encourage a limited number of away rotations in geographically proximate programs when appropriate
	Submission of residency application through the AAMC ERAS system is delayed to provide more time for school and students to submit application Materials	Schools will support students in obtaining needed clinical experience and in preparing residency applications on New timeline
	All residency interviews will now be conducted virtually rather than face to face	schools to work with students using simulated online interviewing formats so that students can be comfortable with process Career counselling stepped up for students to Assist in evaluating residency programs without onsite visits Possible

Coalition for physician Accountability Members : Accreditation council for graduate Medical Education, American Medical Association , Assembly of osteopathic Graduate Medical Educators , Association of American Medical Colleges, Council of Medical speciality societies/organization of program Directors Association , Education Commission for Foreign Medical Graduates National Resident Matching Programs.

Education Married with Technology as the New Future

The use of technology in education is not a new solution. From the early use of personal computers to browse pre-installed encyclopaedias to the latest use of artificial intelligence and virtual reality platforms to recreate clinical scenarios; demonstrate the exponential feat technology has achieved in an industry that has always resisted to change. In the UK, clinical education facilities across several hospital environments are adopting a quasi-technological approach to ensure aspects of theoretical elements of clinical skills are delivered to clinical members of staff. The use of encrypted video-conferencing and e-Newsletter publishing software help to bridge the gap of consistent information delivery, which were once predominated by availability of skills labs and printing facilities. Teaching materials and resources such as flip charts and pens remain the basic materials in circulation in the clinical skills environment. With social distancing in mind, these continue to connect the tutor to the learner through the traditional didactic approach of socio-constructivist teaching model for clinical professionals.

The influx of technology in clinical skills training and in education pays tribute to the connectivism learning theory established by Siemens and Downes in 2005, where e-learning brings forward the knowledge and experience of using technology into the frontier of learning various subjects [7]. The discourse once ensued on whether this learning theory will shape the digital age can be put to rest, as Covid-19 provides the optimal opportunity to put this theory and the several emerging education technologies into practice. In particular, Web-OSCEs were introduced two decades ago to conduct clinical examinations remotely in the USA. Disbanding conventional thinking of traditional clinical skills delivery and examinations, Major S, Sawan and his team replicated the entirety of clinical skills assessment with the injection of digital technology in an effort to transform education,

as a response to Covid-19 in Qatar [8]. All forms of communication relied on emails prior to training assessment, Zoom video conferencing platform was used to conduct the clinical skills delivery and examinations and encrypted social media platform WhatsApp was used in the event where connectivity was stagnating between peers and tutors.

BMJ Journals, Simulation and Technology Enhanced Learning (BMJ STEL) forum continuously receive submissions in relation to the use of simulation and technology enhanced learning in response to the pandemic. In which, many publications demonstrate the breadth of experimentations, innovations and the metamorphosis of clinical skills training with technology [9]. Similarly, to Major, S., Sawan as his team in Qatar, the growing catalogue of digital clinical skills training transformation that is emerging in the current circumstances depicts the limitless capacity to embrace a new era of clinical skills provision.

Conclusion

Covid-19 pandemic has helped communities reassess several pillars in society, including healthcare and education. Simmering in the background, decades earlier was the measured use of technology to enhance and strengthen clinical skills training and more broadly education and learning in general. The pandemic has helped catalyse the transformation of embracing technology in learning. Although educational technologies successfully existed before this global crisis, Covid-19 has helped revolutionise the learning and education environments from centuries-old academic institutions to the skills labs of district general hospitals. Comparable to how locomotive technology transformed the Industrial Revolution in the late eighteenth century; educational technology is transforming clinical skills learning and education in the twenty first century and beyond. The future of clinical skills training and education looks more diversified, integrated and exciting.

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