Refining Medical Education for Doctors in Training in the United Kingdom during the COVID-19 Pandemic

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Categories: Educational Strategies, Learning Outcomes/Competency, Postgraduate (including Speciality Training), Continuing Professional Development, Simulation and Virtual Reality

Received: 22/08/2020
Published: 30/10/2020

Abstract

The current COVID-19 pandemic has led to disruption of medical education for doctors in training posts within the United Kingdom. There has been a cessation of face-to-face teaching and placement rotation with the hope of minimising disruption for clinical provision. Many avenues of education to compensate for in-person teaching have been identified for medical students, but there has been little implemented for junior doctors. This has further implications where doctors may lose the opportunity to attain skills in other specialties and fail to gain sufficient experience for subsequent posts.

Here, we outline teaching resources prior to the pandemic, how trainee education has been impacted by COVID-19, and the longer-term implications of this. Medical education should be an ongoing process throughout training. It is hoped by providing a comprehensive overview of the effects of COVID-19 on our current system that we can identify what is lacking and develop resources to enhance education for doctors in training.

Keywords: COVID-19; National Health System; junior doctors; remote learning; self-development

Introduction

The current coronavirus disease 2019 (COVID-19) pandemic has led to disruption of medical education for doctors in training posts within the United Kingdom. There has been a cessation of face-to-face teaching and suspension of placement rotation with the hope of minimising disruption for clinical provision (Rimmer, 2020). Training days, conferences, and Royal College examinations have been cancelled. Many avenues of education to compensate for in-person teaching have been identified for medical students, but there has been little implemented for junior doctors (Mian and Khan, 2020; Rose, 2020; Newman and Lattouf, 2020; Ferrel and Ryan, 2020). This has further
implications where doctors may lose the opportunity to attain skills in other specialties and fail to gain sufficient experience for subsequent posts.

With the prospect of long-lasting pandemic disruption, there is a requirement for medical education to be reformed to adapt to this time (Kissler et al., 2020). Here, we outline teaching resources prior to the pandemic, how trainee education has been impacted by COVID-19, and adaptations trialled during this time. It is hoped by providing a comprehensive overview of the effects of COVID-19 on our current system that we can identify what is lacking and develop resources to enhance education for doctors in training.

**Pre-COVID trainee education and problems encountered in COVID-19 times**

Medical education for junior doctors in the pre-COVID-19 era was varied and included lectures, grand rounds, skills sessions and simulation workshops (Table 1). Development of practical and clinical knowledge was encouraged both in general and within the individual departments where trainees were placed. Trainees were also presented with ample opportunities to teach their peers and mentor medical students.

The COVID-19 pandemic has shifted focus away from teaching experiences in favour of service provision to ensure the additional demands on the NHS are met. Social distancing has forced many face-to-face and group teaching sessions to be cancelled or postponed. Most rotations have been suspended. As a result, trainees are missing out on the educational experiences derived from managing clinical presentations in different specialties. COVID-19 has necessitated the institution of strict infection control measures with stringent enforcement of PPE reducing non-essential people in some clinical areas, for example in the operating theatre. The need to ensure progression to the next stage of training is not disrupted has led to the requirements for Annual Review of Competence Progression (ARCP) being truncated, perhaps sacrificing skills that trainees would have otherwise attained. Instead of the multiplicity of clinical dilemmas trainees would ordinarily have to confront, emphasis has been placed on optimising management and recognising complications in COVID-19 patients. In some aspects, the pandemic has presented trainees a unique chance to play a role in the response to a novel infectious threat, which can provide unprecedented insight into the management of the acutely unwell at an early stage in their careers. This is, however, in lieu of a comprehensive all-encompassing program of protected teaching that is usually delivered.

**COVID-19 adaptations**

COVID-19 has forced adaptations to nearly all aspects of clinical practice, and the deliverance of teaching is no different. We are already starting to see some of the adjustments that can be made to ensure medical education continues in the hospital environment (Table 1).

Some centres, such as Bristol, are continuing to offer simulation, social distancing permitting, with scenarios reflecting the clinical situations made common in the pandemic. Online meetings are being used to deliver teaching to wider audiences, such as the livestreamed Royal College of Physicians Edinburgh lectures. Royal Colleges have started to recognise the disruption caused by cancellation of postgraduate examinations, and as such are starting to offer these assessments online. Careers fairs at some trusts have been moved to the online domain, as have some conferences. The ASIT surgical education conference is an example of the latter. Some of the socially distanced teaching that is allowed to take place in a seminar format has been geared towards equipping juniors with skills that come under increasing value in these unprecedented times. An example of this is the provision of sessions designed at facilitating difficult conversations with relatives over the phone; conversations regarding resuscitation and
transition to end of life care are conversations seldom had remotely prior to the pandemic, but restrictions on visiting are rendering these skills essential.

There are limitations with some of these adaptations. Online sessions require access to a computer and are less able to foster interaction. Online resources are often generalised and may not reflect the bespoke challenges faced by individual trusts in a way traditional sessions may have once done. The cancellation of courses and conferences denies trainees chances to enhance their portfolios in anticipation of applications for further training.

Table 1: Adaptations to Medical Education for doctors in training during COVID-19

| Medical Education before COVID-19                                                                 | Adaptations during COVID-19                      |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Didactic sessions (Grand Rounds, Morbidity and Mortality Meetings, Protected Teaching)           | No physical meetings                             |
|                                                                                                  | Online meetings                                 |
| Exposure to additional specialties (Rotating during placement)                                  | Suspension of rotation                           |
|                                                                                                  | Online lectures                                 |
| Additional clinical learning opportunities (Clinics, Theatre)                                    | No physical attendance                          |
|                                                                                                  | Simulation laboratory                            |
| Development of teaching skills (mentoring medical students, near peer teaching)                  | Mentoring Foundation Interim Year 1 Doctors      |
| Foundation competencies (Procedures, Quality Improvement, Presentations)                        | Many competencies not required                   |
|                                                                                                  | e-Learning for Healthcare                       |
| Preparation for specialty training (Examinations, Training Days, Question Banks, Conferences, Royal College Resources) | Examinations mostly cancelled, some moved to online (FRCOphth part 1) |
|                                                                                                  | Conferences and training days cancelled or replaced with online alternatives |
|                                                                                                  | Still can subscribe to online question banks and Royal College resources |
| Grand round and journal clubs presenting on a variety of different topics                       | Greater emphasis on appraisal of evidence behind COVID-19 management |

Towards a post COVID-19 era

To improve current medical education resources, we should first look at medical schools for inspiration. There has been a wealth of adaptations suitable for remote learning. In the SARS epidemic, patient surrogates such as webcasting, videotaped vignettes, audiotaped recordings, and online chatrooms were utilised for medical students (Lim et al., 2009). This telelearning strategy has been employed in UK medical schools during the current COVID-19 pandemic (Mian and Khan 2020). A problem identified with telelearning is that this often only replaces lecture formats, which were only a minor part of the existing curriculum, requiring large quantities of resources to be developed rapidly in each educational institution (Ferrel and Ryan, 2020). A solution suggested in the United States has been collaboration between instructors across the country to produce resources, and an online platform to allow for national dissemination and equal access (Ferrel and Ryan, 2020). In the United Kingdom, doctors in training are fortunate to have such platforms such as e-Learning for Healthcare, though modules are included with little guidance on curriculum or subject depth. Reform of such a platform with a national curriculum to identify modules and case vignettes suitable for different stages of training or specialties would both ensure less hours are wasted producing duplicate resources in different trusts and set up a national database which would be resilient to future pandemics.

Patient contact in an outpatient or a procedural setting is difficult to replace in this current climate. The cessation of
most clinics and streamlining of theatre staff to ensure only essential members of the team are present means that those learning opportunities are lost. The rise of virtual simulation-based education in medical schools is promising, but this has been late to filter into hospitals (Newman and Lattouf, 2020). Setting up a virtual environment and laboratory is costly and time intensive. This strategy may not be feasible for Trusts without these existing resources, but development of simulation as an additional modality post COVID-19 will strengthen the current medical education provision. In the interim, flexibility may be required. In the United States, colleges have considered modifying the academic calendar so modules favouring self-learning can be brought ahead in front of scheduled patient contact time and clerkships (Rose, 2020). We can consider similar strategies for doctors in training, by encouraging audit data-gathering, online presentations, and research during the acute pandemic period.

Self-directed and mentor-based learning networks will always be more resilient in a pandemic scenario due to the small number of people involved to implement. Previous programmes to enhance self-directed learning by guiding doctors in training to create Specific, Measurable, Attainable, Relevant, and Timely (SMART) goals themselves were feasible and improved examination outcomes (Mai and Clark, 2016). A senior doctor within a specialty in which the doctor in training is interested can perform the role of the mentor by guiding and providing feedback remotely. Another option is the Education or Clinical Supervisor, whose role can be adapted to fill this. This strategy both encourages lifelong learning and enables targeted personal education.

Medicine is a career famed for lifelong learning. Education is important for personal and career development but also for patient safety. As COVID-19 has exposed the fragility of the current medical education system, it has also shown the importance of education for patient care. Hospitals in China with more critical-care physicians enrolled on the national standardised Chinese Critical Care Certified Course (5C) programme were associated with decreased mortality in ICU (Li, Xv and Yan J, 2020). The development of a resilient medical education system in the post COVID-19 era is therefore vital.

**Conclusion**

Medical education for doctors in training has remained static in recent years, in the form of didactic teaching, clinical experiences, and specialty exposure. The current COVID-19 pandemic has revealed the fragility of the system, and in the suspension of face-to-face teaching and rotations, a lack of suitable alternatives.

Some adaptations to provide limited remote lectures or meetings have been set up on a Trust-by-Trust basis, but this only serves to replace the small didactic teaching portion of the medical education curriculum. National telelearning platforms, virtual simulation, encouragement of remote educational or research activities, mentorship networks, and encouragement of life-long self-directed learning are some of the many strategies which may be employed at this time to address these neglected areas. We should regard this moment as an impetus for real change, and the opportunity to create a sustainable and enduring medical education system.

**Take Home Messages**

- Adjustments to medical education for doctors in training have been implemented during the COVID-19 pandemic
- Many traditional modalities of learning such as clinic and theatre experience cannot be entirely replaced by current adjustments
- A more robust medical education system can be created through the setting up of national learning platforms, simulation education, mentorship, and development of self-directed learning
Notes On Contributors

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Acknowledgements

None.

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Appendices

None.

Declarations

The author has declared that there are no conflicts of interest.

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Ethics Statement

No requirement for ethics approval for this piece.

External Funding

This article has not had any External Funding

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