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Optimising educational opportunities for trainees during the pandemic

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Abstract

Trainees around the world have experienced significant challenges to their personal life and training as a result of the COVID-19 pandemic. Many have felt the psychological and physical impacts of working during the COVID-19 pandemic. Training-specific challenges have included redeployment, cancellation of operative lists, cancellation of educational opportunities and loss of exposure to training as a result of shielding. This article describes the impact of infection with COVID-19 on psychological wellbeing and training. It discusses general measures the trainee can take to mitigate the challenges this has caused, categorised into personal, planning and educational resources, and measures focussed on certain challenges. Finally, the vital importance of support for trainees is described, including peer support, departmental resources and the growing array of online material.

Key words: COVID-19; Education; Impact; Support; Training

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Introduction

At the time of writing, there have been over 136 million cases of COVID-19 and nearly 3 million deaths, over 127 000 of which have been in the UK (World Health Organization, 2021). The COVID-19 pandemic has resulted in significant challenges for trainees in all specialties: there are increased and changed demands of service provision, with the ongoing requirements for progression in training. There may also be pressures outside training, for example challenges of childcare and loss of support network as a result of the social distancing requirements. Trainees need to be supported in proactively seeking and optimising educational opportunities. This article outlines the impact on training, looks at barriers to training and how they may be mitigated against, and describes potential sources of support.

The impact of the COVID-19 pandemic on training

There have been numerous effects on trainees including COVID-19 infection, mental health consequences and loss of training opportunities.

Infection with COVID-19

The risk of transmission is increased for front-line healthcare workers. Studies have estimated roughly 10–20% of affected patients are healthcare workers (Bandyopadhyay et al, 2020; Alimohammadi et al, 2021).

There is increasing evidence that COVID-19 infection and sequelae affect certain groups disproportionately. In Bandyopadhyay et al's (2020) systematic review, the median age of healthcare workers who were infected was 47.3 years and 71% were women. They also reported that the highest rate of healthcare worker infection was reported in Europe, the largest group affected was nursing staff, but the highest mortality rate was among doctors (Bandyopadhyay et al, 2020). Interestingly, a London hospital found that clinical staff had higher rates of laboratory-diagnosed COVID-19 infection but similar sickness rates to non-clinical staff (Zheng et al, 2020). Staff from black and minority ethnic groups were estimated to have at least five times greater risk of infection with COVID-19 than individuals from non-Hispanic white community in a prospective observational cohort study in the UK and the USA (Nguyen et al, 2020). They were also found to be disproportionately affected by inadequacies in personal protective equipment and to be more likely to work

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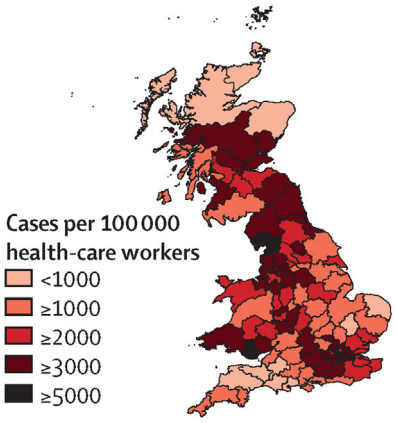

Figure 1. Prevalence of a positive COVID-19 test from healthcare workers across the UK (Nguyen et al, 2020).

in settings with increased exposure to COVID-19 patients (Nguyen et al, 2020). Figure 1 shows the prevalence of a positive COVID-19 test from healthcare workers in areas of the UK. These trends may result in more work-related anxiety for some individuals than others.

In addition to the implications in terms of morbidity and mortality of staff, being unwell may result in missed educational opportunities, particularly in relation to highly sought-after training events, such as specialist clinics or procedural lists. For those at work, additional staff sickness in departments may mean an increased workload and shift away from certain training opportunities as service provision becomes paramount.

Psychological impact of working during the pandemic

Many feel the anticipatory stress of managing their risk of infection and the risk of infecting family members, especially if they are in contact with those vulnerable to infection and its serious sequelae. An estimated 90% of neurosurgical trainees believe that COVID-19 has impacted their mental health (Alimohammadi et al, 2021). In an Italian survey, a quarter of radiologists experienced moderate or severe sleep disturbances, and two thirds saw effects on their family relationships (Coppola et al, 2021). When compounded by the loss of the support network this may lead to even more stress. Some have also felt increased financial burden as their households dropped to a single income (Sneyd et al, 2020).

Anticipatory anxiety, dealing with higher sickness and death, increased work commitments, and seeing significant morbidity and mortality in a relative short timeframe all play a part in the psychological impact of the pandemic (Kaul et al, 2021).

Direct impact on training

All trainees, regardless of the training programme, have been directly affected by working during the COVID-19 pandemic, some more than others.

Redeployment

Rates of redeployment were as high as 46% in certain surgical programmes (Hope et al, 2021). This has not only affected so-called ‘craft’ specialties, where competence in surgical procedures is required, but also medical specialties with reduced exposure to specialist clinics and procedures. This has resulted in reduced training opportunities, leaving many with questions about how and when training will be made up, and their level of competence by the time they complete training.

Lost training opportunities

Some educational activities have been cancelled as a result of social distancing requirements, including face-to-face simulation and procedural courses. This can delay mandatory training and prevent access to aspirational courses which provide inspiration and motivation. Health Education England (2021) has adopted ‘COVID outcomes’ for Annual Reviews of

Competency Progression which denote reasonable progress given the effects of the pandemic. This may encourage missed learning opportunities to be made up when departments are recovering from surges in infection rates.

Virtual learning shift

There has been a general shift towards virtual learning with increased flexibility in how and when educational material is delivered (Sneyd et al, 2020). Over time, the quality and quantity of virtual learning opportunities has increased as departments have learned how to better cope with the demands of the pandemic. The added flexibility and creativity may encourage trainees to commit to more in their own time, potentially disrupting their work–life balance.

Effect on procedural specialties

Trainees on programmes that require procedural competence have been particularly affected as most or all elective procedural lists have been cancelled. This has left many trainees feeling that they may be inadequately trained, and some suggesting that extending training may be necessary (Palacios Hautuco et al, 2021). A review of orthopaedic trainees showed that there was a 50% reduction in operations with trainees as the primary surgeon (Munro et al, 2021). This may be especially relevant if in early training or towards the end of training and may mean that trainees need their training duration to be extended.

Similar concerns were voiced by trainees in the past regarding the impact of the European Working Time Directive on surgical exposure (Maisonneuve et al, 2014). Fitzgerald and Caesar (2012) outlined tips for how to overcome such challenges, some of which are still relevant (Table 1).

Examinations

Examinations have been cancelled or deferred worldwide resulting in stalling of training progression, which has implications for managing out-of-work commitments and study time. The uncertainty about when examinations may occur and if further cancellations may happen have also led to anxiety. UK Royal colleges have been forced to change the mode of examination delivery, for example computer-based, performance at local test centres and online-video conferencing for vivas (Sneyd et al, 2020), which means that trainees have needed to adapt their usual practice.

How to mitigate challenges to training

Energy levels and motivation for training may have been dampened as a result of these challenges. However, educational opportunities should be seized where possible, even using unorthodox methods. A creative eye may be needed to meet training needs in new and

Table 1. Suggestions for how to mitigate effects of the European Working Time Directive

Be proactive in seeking out training opportunities during regular working hours. Find out who is operating when and whether you can assist; find out who needs help in clinic
For more junior trainees, ensure you gain the most from hospital-based training time by practicing basic surgical skills (including laparoscopy, where appropriate) at home using simple models
Make sure training opportunities are protected in any revisions of your rota and alert your consultants, educational supervisors, programme directors and NHS trust if this is not the case
Ensure local and regional training (eg lectures, simulation sessions) takes place
Maximise study leave benefits and undertake appropriate courses
Discuss service provision balance problems with seniors or training programme coordinators to ensure training opportunities in your current post are maximised

From Fitzgerald and Caesar (2012)

different ways. General measures to mitigate the effects of such challenges are described, followed by challenge-specific measures.

General measures

Table 2 lists general measures to optimise learning opportunities. These may be harder to implement because of the inherent challenges of working at present. Many of these were applicable before the COVID-19 pandemic.

These can be described using the acronym 'PPE' where factors are broadly categorised into personal, planning and educational resources. Regarding personal factors, Maslow's hierarchy of needs (Figure 2) can be applied to training in that addressing the spectrum of needs in physiological (food and drink), safety (shelter), belonging (both inside and outside work), esteem and self-actualisation (reaching one's potential) are needed to promote learning (McLeod, 2020). Examples include making time to eat during busy shifts, obtaining adequate rest and regular exercise, taking actions to develop personal growth.

More than ever, a more self-directed approach to learning is required. Planning and organisation are key. Allocating regular, dedicated time to identify learning needs, goals and how they might be achieved, may increase learning. These will be informed by training programme curricula, specific trainee goals, Annual Reviews of Competency Progression outcomes and available resources. There may be new opportunities for professional development that were not accessible previously, for example more time for teaching and quality improvement projects.

While some educational activity will be cancelled, others may have been changed or newly created. A list of potential resources to complement on-the-job learning is outlined in Table 3. College tutors and supervisors can be approached to organise teaching to attempt to fill gaps, which may be on a local, regional or national scale. Using virtual learning on

Table 2. Personal, planning and educational resources: measures to optimise learning opportunities

Personal	Regular exercise	
	Healthy diet	
	Mindfulness	
	Building in time for rest	
	Spiritual or belief system	
	Alteration to support network, for example virtual meets	
Planning	Weekly or daily organisation time	Identifying learning needs
		Identifying possible solutions to address learning needs, for example attending a specialist clinic
		Communicate with those organising teaching or other desired clinical activities of interest
Educational resources	College tutor	
	Educational supervisor	
	Rota coordinator	
	Leads of subspecialty programmes or modules	
	Virtual learning websites, for example ELearning for Healthcare, Royal college websites	
	Mandatory or aspirational courses	
	Online videos of procedures, for example on YouTube	
	Books focused on curriculum or professional exams	
	Consultants with specialist interests	

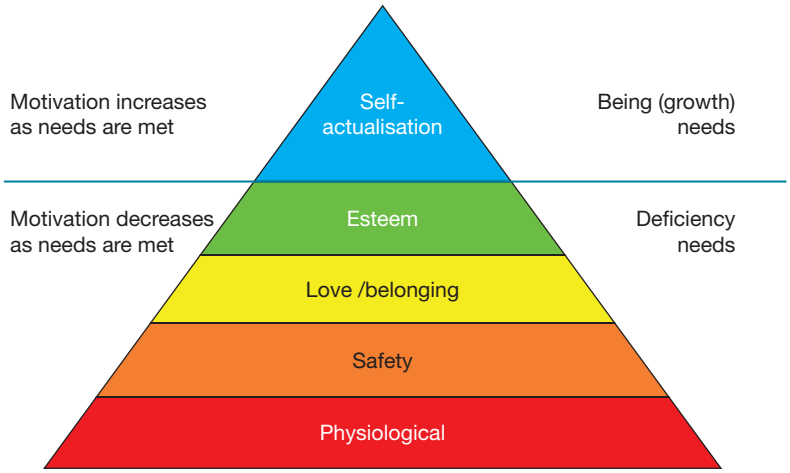

Figure 2. Maslow's hierarchy of need (McLeod, 2020).

websites such as ELearning for Healthcare (https://www.e-lfh.org.uk) may address some learning needs, but will be of limited or no value for others, such as procedural skills.

Specific measures

Table 3 lists potential challenges to training with possible measures to mitigate them. When challenges are faced, this may serve as a useful checklist or to generate ideas.

Support from others

Crucially, trainees do not act alone in promoting their training. They should be supported by peers, their personal support network, supervisors, resources in their department, trade unions, and the growing shift to online learning.

Peer support

For many this may be a more appropriate form of support as there is no concern about expressing views or feelings in the presence of senior colleagues. Junior–senior buddy systems, coaching from exam veterans and outside work virtual social meets have been well received by trainees in Singapore and Australia (Chan et al, 2020). This may be of particular use in departments where there has been significant redeployment and juniors do not know each other well.

Departmental resources

Supervisors should make a special effort to be approachable and engage with trainees. Where necessary, formal training in pastoral care and supervision may help to support trainees with workplace and personal stressors. Trainees should not forget that current challenges may parallel historical challenges, so consultants have a wealth of experience to offer. Whether formal or informal discussions, significant learning may take place in the process of sharing stories and experiences.

A dedicated point of contact, for example an interested consultant, may act as a source of help to any trainees who experience significant challenges in their training. This may well be supplemented by other sources, for example highlighting educational tools, advising consultation with a GP or occupational health.

Regular communication with trainees reduces anxieties about upcoming changes to their education (Hall et al, 2020). Resources to support trainees within departments may include:

- Regular meetings between juniors and seniors to voice any concerns regarding training
- Optimising educational supervision meetings
- Recreational virtual meetings, such as quizzes, to reduce any hierarchy gradient and encourage good working relations
- A department-wide shared document or board where each trainee can list learning needs or goals to promote their chance of developing competence
- A dedicated clinical psychologist for the use of team members.

Preparation and planning for surges and recovery periods of the pandemic must include trainee wellbeing and progression. This might include encouraging trainees to take annual leave at certain points, highlighting an increase in opportunities when they arise such, as reintroduction of procedural lists, and increasing virtual learning opportunities in surges. Asking consultants about gaps in training will also inform creation or adaptation of educational activities.

Table 3. Tips for how to mitigate challenges of working during the pandemic

Training component	Challenges	How to mitigate impact of challenges
Redeployment	■ Less time in clinical areas relevant to training programme ■ Fewer opportunities to develop relevant procedural skills and knowledge	■ Identify clinical activities, educational activities or teaching which are more relevant to training and prioritise attending these ■ Develop transferrable skills, such as taking part in teaching, audit, research projects ■ Liaise with previous department to request placement in a particular clinical area, where service provision allows ■ Continue to attend teaching from usual department
Knowing your strengths	■ Having knowledge or skills not immediately relevant to current department in redeployment	■ Seek opportunities or organising events to exchange learning between departments or specialties for mutual benefit
Procedural lists	■ Cancellation or reduction in procedural or surgical lists	■ Communicate with the rota team to aim for allocation to certain lists ■ Review anatomy and procedural knowledge before lists ■ Preoperative preparing of cases ■ Preoperative communication with supervising consultant to try and carry out workplace-based assessments ■ Obtain skills through other means, such as simulation, laparoscopic box trainers
Stresses inside work	■ Managing patients with different or more severe conditions	■ Identify team members who can support in clinical activities or provide teaching or training ■ Develop a 'buddy system' to close knowledge and skills gap, and to provide mentorship and support
Stresses outside work	■ Increased or changed caring responsibilities ■ Interaction with unwell or vulnerable family members ■ Unemployment within family	■ Optimise health and wellbeing ■ Dedicate no-stress family time ■ Dedicate planning and organisation time as a family unit ■ Financial planning advice, for example from trade unions
Examination	■ Deferring or cancellation	■ Adapt revision plans to prevent revision burnout and boredom ■ Request additional tutorials to encourage motivation ■ Keep abreast of Royal college updates
Annual Reviews of Competency Progression	■ Reduced ability to obtain necessary competencies for stage of training	■ Identify specific learning needs and discussion with college tutor and educational supervisor to find creative solutions to fill gaps
Face-to-face teaching	■ Cancellation or change to mode of delivery	■ Request delivery of teaching in virtual format at a later time ■ Hybrid teaching, such as a mixture of virtual and face-to-face learning
Research	■ Less opportunity, time and energy to pursue research projects ■ Less ability to keep abreast of COVID-19 evidence base	■ Research may have to be deferred or adapted until certain demands of service provision reduce ■ Ongoing literature review may inform projects while lab work or data collection may have ceased ■ Regular journal club meetings to discuss recent literature

Key points

- The psychological, physical and emotional burden of working during the COVID-19 pandemic should not be underestimated.
- Both trainees and those responsible for training should engage effectively to optimise learning opportunities, which will need regular problem solving.
- Creative thinking and a self-directed approach from trainees is needed to identify learning needs, goals and outcomes, and to meet curriculum needs.
- Educational supervisors, college tutors, deaneries and Royal college websites provide educational resources and advice to identify and help to address learning needs.
- With regular and meaningful engagement from all those vested in trainee development, trainees can be supported to optimise educational opportunities in new and creative ways, using local and global resources.

Online material

It is possible to adapt and invent new learning resources for trainees, but it should be noted that COVID-19 has fostered a new age of collaboration to address learning needs. Educators are reaching out to colleagues in different hospitals, regions, countries to share learning resources (Hall et al, 2020). Possible resources include Royal college websites and speciality-specific society websites. This may provide an added benefit of learning new perspectives from colleagues globally (ElHawary et al, 2020).

Conclusions

Trainees have experienced exceptional pressures and challenges both in training and outside as a result of the COVID-19 pandemic. As adult learners they remain responsible for their learning, but they must think creatively and methodically, with support from their departments, Royal colleges and growing global network, to optimise learning opportunities. With this support the effects on mental health and lost training opportunities may be reduced and new opportunities may be sought.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

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Top tips

- Optimise health and wellbeing which will promote learning at work, including dedicated rest and exercise time.
- Use your support network during challenging moments, even if this is only possible remotely.
- Allow regular dedicated time for planning and organising to optimise learning from educational activities.
- Adopt a self-directed learning approach to training: identify learning needs, consider how to address them, be creative if challenges are met.
- Accept that it may not be possible to develop skills in certain competencies despite best efforts, which may allow focus on other curriculum areas.

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