

Opinion

How can gastroenterology training thrive in a post-COVID world?

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GASTROENTEROLOGY TRAINING LANDSCAPE PRE-COVID

Gastroenterology training is understandably arduous. The UK Gastroenterology curriculum spans diseases of the liver, luminal gastrointestinal (GI) tract and pancreatobiliary system. Trainees must complete periods of specialty nutrition and hepatology alongside the general internal medicine (GIM) curriculum. Certification in gastroscopy is mandatory, and colonoscopy certification is expected for most prior to certificate of completion of training (CCT).¹ Gastroenterology trainees have among the highest rates of burnout within medical specialties, with training negatively affecting relationships and morale, and high levels of reported presenteeism.² Gastroenterology previously enjoyed high competition ratios; these are now falling.

Trainees often struggle to acquire colonoscopy skills. A 2018 survey demonstrated half lacked certification as they approached CCT,³ and decreasing procedure numbers.⁴ Endoscopy training for upper GI bleeding (UGIB) represents a further challenge, as out-of-hours (OOH) services are frequently consultant-delivered. These factors drive a need for post-CCT supervision at a time of widespread consultant vacancies.²

As sub-specialty areas of gastroenterology become increasingly complex, trainees must invest more time to gain competence. Developing sub-specialty expertise now informally mandates out of programme training.

Time committed to GIM is increasing, which deleteriously affects specialty training time.³ GIM rota gaps are common,² exacerbating pressure on trainees. The European Working Time Directive and 2016 junior doctors' contract contributed both to reduced

specialty training time and continuity. Imminent reforms following the Shape of Training report will reduce Gastroenterology training from five to 4 years,⁵ further compounding these problems.

Our increasingly complex craft specialty and reduced training time would inevitably have mandated change. The need to mitigate the impact of the COVID-19 pandemic must now catalyse that change.

TRAINING ISSUES ARISING DURING THE COVID-19 ERA

The COVID-19 pandemic has necessitated dramatic restructuring of the workforce, with gastroenterology trainees widely redeployed and elective activity reduced. The impact on specialty training is substantial, with key examples summarised in [table 1](#). Reduced endoscopy training is a particular challenge internationally,⁶ and will disproportionately affect junior trainees who cannot work under remote supervision.

The adverse impact to trainees who are shielding for health reasons is particularly concerning. This group includes pregnant trainees and those with chronic illness, for whom face-to-face clinical activity may be limited for the foreseeable future. Currently, remote training and opportunities for workplace-based assessments (WPBAs) to demonstrate progression are limited. The training needs of this cohort must be prioritised to ensure equity.

As long as SARS-CoV-2 transmission and the requirement to divide COVID-19 and non-COVID work remain, gastroenterology training cannot return to its previous format. Potential further waves of COVID-19 bring additional uncertainty. Ongoing trainee throughput is essential, given the need for consultant workforce expansion.⁷ Rigorous planning is required to mitigate the predicted

Table 1 Challenges to training in the COVID era and proposed solutions

Challenges:	Proposed solutions:
<p>Endoscopy training</p> <ul style="list-style-type: none"> ▶ Dramatic reduction in endoscopy volume during height of pandemic with delay of all non-urgent procedures advised by national specialty groups.²² ▶ Large and growing waiting lists make it challenging for trusts to accommodate training lists with reduced procedure numbers. ▶ Social distancing requirements and PPE provision limits the potential number of staff in the endoscopy room. ▶ Endoscopy services outsourced to private providers/units may lead to exclusion of trainees. ▶ Trainees and their trainers have deskilled following a lengthy period of reduced endoscopy activity. ▶ Division of hospital services between 'hot' (COVID positive) and 'cold' sites will make it challenging for trainees who have inpatient responsibilities to attend training lists ad-hoc. 	<p>Individualised planning</p> <ul style="list-style-type: none"> ▶ Review the needs of trainees at a local or regional level to direct limited training opportunities effectively. ▶ Risk assessment for high risk groups and protect LTFT trainees. ▶ Protect trainee presence in endoscopy if PPE provision is rationed. <p>Simulation</p> <ul style="list-style-type: none"> ▶ Should be embedded in all training regions to allow trainees to improve technical skills without patient exposure. ▶ Could facilitate early gastroscopy training as a baseline before patient training. <p>'Sprint' courses</p> <ul style="list-style-type: none"> ▶ Immersive high-volume training allows training to accredit over a reduced period of time. ▶ Skills continue to develop through independent service lists with remote supervision. <p>Alternative delivery of non-technical skills training for example, decision-making</p> <ul style="list-style-type: none"> ▶ Expert-delivered seminar video endoscopy learning mapped to curriculum. ▶ Online decision-making practice scenarios. ▶ Local endoscopy MDTs for example, polyp meetings. <p>Joint advisory group</p> <ul style="list-style-type: none"> ▶ Flexibility where possible regarding pre-certification period. ▶ Support access to basic skills courses and alternative modalities of training throughout the regions. <p>Upper GI bleed on-call experience</p> <ul style="list-style-type: none"> ▶ Involvement of trainees on OOH rotas nationally is variable. ▶ Making this a requirement of senior trainees could facilitate acquisition of key decision-making skills.
<p>Planned educational opportunities</p> <ul style="list-style-type: none"> ▶ Local/regional cancer and IBD MDTs, radiology meetings and histology meetings are limited to 'essential' staff in some trusts, excluding trainees who may be present for educational value. ▶ Many formal local/regional teaching sessions cancelled. ▶ Key national courses, including those required or desirable for progression (eg, JAG endoscopy training courses, ALS courses) cancelled. 	<p>Reinstate formal training days</p> <ul style="list-style-type: none"> ▶ Most curriculum-mapped training could be delivered online via videoconferencing portals. ▶ Regional collaboration would permit standardised content and reduce duplication. ▶ Key courses required for trainee progression should be identified to ensure adequate/extra capacity for trainees.
<p>Outpatient clinics</p> <ul style="list-style-type: none"> ▶ Telephone and virtual clinics limit the possibilities for face-to-face observation, especially if work is undertaken from home. ▶ Reduced supervision makes it more challenging for trainees to request workplace-based assessments required for progression. 	<ul style="list-style-type: none"> ▶ Consultants with trainees in clinic should proactively discuss arrangements for case review for example, meeting/telephone call at the end of a clinic list. ▶ Provision should be made for more direct observation of junior trainees starting in outpatient clinics. ▶ Some virtual platforms allow multiple staff members on the same call, allowing trainees and trainers to be in the same consultation. Could provide excellent supervised training opportunities, although requires service and staffing redesign, and medical education research.
<p>Subspecialty exposure</p> <ul style="list-style-type: none"> ▶ Redeployment to GIM means some trainees will have missed their planned time in subspecialty training for example, level 2/3 liver centres, nutrition. ▶ Many experiences deemed crucial for training have been postponed or moved to 'virtual' activities, making demonstration of experience more challenging. 	<ul style="list-style-type: none"> ▶ Specialist services should offer virtual access to meetings, and facilitate remote access by trainees within the region. ▶ Content from specialist centre meetings could be recorded, anonymised and used as online learning materials. ▶ Virtual specialist ward rounds, as are being piloted for medical students in some London teaching hospitals, could facilitate remote exposure to sub-specialty inpatient medicine, for instance liver transplantation or intestinal failure.

ALS, Advanced Life Support; GIM, general internal medicine; IBD, inflammatory bowel disease; JAG, Joint Advisory Group on GI Endoscopy; LTFT, less than full-time; MDT, multidisciplinary team meeting; OOH, out-of-hours; PPE, personal protective equipment.

difficulties in acquiring curriculum competencies and avoid prolongation of training. Even if a future vaccine negates the need for operational division, the pre-COVID *status quo* is not acceptable.

FUTURE OF GASTROENTEROLOGY TRAINING

Access to endoscopy training during the pandemic has varied substantially. Concerted efforts are now needed to assess trainees' experience and needs, to guide allocation of limited training resources. Where endoscopic training opportunities are pressured, regional processes may allow trainees access at nearby trusts or within the private sector. This approach should focus on diagnostic endoscopy training for junior trainees,

therapeutic experience for those more senior and targeted support for particular interests, such as endoscopic retrograde cholangiopancreatography (ERCP). Opportunities for less than full time trainees need to be protected. Concerns have been raised about rationing of personal protective equipment (PPE) limiting staff numbers in endoscopy,⁸ but PPE provision for training should be considered an investment in future endoscopy services.

Upper GI endoscopy, endoscopic ultrasound and ERCP, are aerosol generating procedures, requiring risk assessments for COVID-19 higher risk groups.^{9 10} If in-person training is not possible, high-quality alternative training methods must be prioritised. Simulation

training can aid the acquisition of technical procedural skills, accelerating progression without patient contact. However, provision of endoscopy simulation equipment and faculty is sparse. All facilities training gastroenterologists should have access to simulation equipment, and ensure trainees have the time and supervision to profit from it. Immersive, high-volume training, such as 'Sprint' courses, allow rapid progression in technical skills and should be rolled out universally early in training.¹¹

As trainees progress, non-endoscopic technical skills and complex decision-making become the training focus.¹² Simulation, video endoscopy teaching and polyp multidisciplinary team meetings (MDTs), could be used to develop these skills. Such innovation has already begun to deliver streamed live endoscopy courses and teaching sessions. These provide opportunities for international collaboration and could be a resource for years to come.

The management of UGIB, a core part of the consultant gastroenterologist's role, presents particular technical and decision-making challenges. Despite this, formal training in UGIB remains variable, except where trainees staff OOH UGIB emergency rotas.¹³ We recommend all trainees have at least 1 year on an OOH UGIB rota, alongside appropriate courses and video learning materials.

The UK's Joint Advisory Group on GI Endoscopy (JAG) unit accreditation and the rigorous evidence-based criteria for endoscopy training are international exemplars of excellence.¹⁴ Key performance indicators that correlate with patient outcomes are an important goal of endoscopy training.¹⁵ The recent temporary relaxation of certification time periods is a welcome step towards flexibility.¹⁶ Nationally, provision for key courses, such as basic endoscopy courses, must ensure capacity is sufficient for trainees to attend early in training.

Telemedicine clinics were rapidly established at many hospitals during the COVID-19 epidemic, but these pose challenges. Direct supervision for junior trainees is difficult with conventional telephone consultations. However, virtual consultation platforms allowing MDT clinics could provide excellent opportunities for supervision and training. With trainers and trainees on the same call, WPBAs could be easily conducted. Although trainees typically prefer in-person supervision, video assessment has been demonstrated to be an appropriate method of assessing performance.^{17 18} Telemedicine has been shown to improve access to specialist care for rural or hard-to-reach patients and their families, and is already in use by gastroenterologists in the UK.¹⁹ Virtual clinics can safely reduce patient travel time and costs, as well as improving compliance and satisfaction.^{19 20} Embedding telemedicine clinics in routine hospital care is likely, therefore, to benefit both trainees and patients.

Trainees require sub-specialty exposure to complex nutrition, hepatology and IBD. Many have missed planned rotations due to COVID-19 redeployment, and providing new opportunities for these trainees must be a priority so as not to impede their progression. Embracing novel technological platforms for sub-specialty learning provides an opportunity to significantly improve training. Virtual 'ward rounds', pioneered at some medical schools, could provide exposure to sub-specialist inpatient care. Sub-specialty services, particularly those only available in tertiary centres such as paediatric-to-adult transition, neuro-gastroenterology and specialist cancer services, could provide remote access for regional trainees. The discussion of complex cases and interventions in such MDTs provides vital educational opportunities, and the normalisation of video-conferencing during COVID-19 could allow such learning opportunities to be delivered remotely, including between trusts in regional networks. Furthermore, content from such meetings could also be recorded, anonymised and developed into online learning resources for trainees, aligned to curriculum requirements. Specialty societies, such as the British Society of Gastroenterology (BSG), British Association for the Study of the Liver (BASL) and British Association for Parenteral and Enteral Nutrition (BAPEN), could support this work by collating, hosting and overcoming governance challenges to such content.

Innovation in training approaches will require investment, both of money and of trainer time. However, the COVID-19 pandemic has necessitated substantial organisational investment in teleconferencing infrastructure, reducing future barriers to change. Simulation in particular requires considerable resource. Health Education England have already supported increased simulation in core medical training, and a national strategy for simulation more widely in training is underway.²¹

High-quality gastroenterology training takes time, a commodity in short supply, particularly with planned Shape of Training reforms. GIM work is the greatest barrier to gastroenterology training, and trainees' time must be protected from the increasing service demands of the medical registrar rota, while meeting their GIM learning requirements.³ Models offering 'ring-fenced' gastroenterology training could include short full-time GIM attachments (eg, limited to a total of 12 months in a 4-year programme), with OOH UGIB and specialty advice rotas undertaken in the remaining training years. Physician specialties, including gastroenterology, are underdoctored, and additional recruitment should be considered, either with formal training numbers, or locally employed doctors training towards a Certificate of Eligibility for Specialist Registration.

'OUT OF ADVERSITY COMES OPPORTUNITY'

Even before the appearance of an international pandemic, gastroenterology training was facing a wicked series of challenges, with trainees struggling to acquire endoscopic and specialist skills, worrying levels of burnout and the prospect of an imminent reduction in training duration. While COVID-19 may be the 'straw that breaks the camel's back' of gastroenterology training, there were substantial pre-existing problems.

However, this challenge provides an opportunity to review gastroenterology training, and fundamentally shift training to a model that is smarter, more joined-up and focused on specific training goals, while prioritising trainees' well-being. We must bring 21st century technology into training. Such changes need to be made collaboratively with trainees, to ensure all have the opportunities and experiences they need. Gastroenterology can, and should, become an exemplar of training excellence, securing the specialty, staffing and great patient care for the future.

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