Surgical training during the COVID-19 pandemic – the cloud with a silver lining?

Editor

The COVID-19 pandemic has caused unprecedented disruption to global healthcare[1]. In the UK, planned operations, including the majority of cancer surgery, was discontinued at the start of April 2020[2]. In line with national guidance, rapid reconfiguration of emergency and elective surgical care has followed[3,4]. Doctors of all levels have been seconded to medicine and critical care; this has had a detrimental effect on training, especially within surgical specialties. General surgical training has not been immune to these necessary changes, anecdotally resulting in reduced operating frequency, procedure number and case type available to higher surgical trainees.

To understand this impact, we retrospectively interrogated operative logbooks of three higher surgical trainees from 1 April to 18 May 2020. Trainee experience level spanned the training pathway; surgical training year (ST) 4 (Trainee 1), 6 (Trainee 2) and 8 (Trainee 3).

There were 48 potential working days over this period. The number of shifts worked between trainees was comparable; Trainee 1: 23, Trainee 2: 23 and Trainee 3: 24. All worked a full-time, on-call rota including secondment periods to COVID-19 medical wards. No trainee was explicitly scheduled to cover the emergency (CEPOD) theatre over this period, although when working overnight they would be responsible for performing urgent operations with consultant input as necessary.

The total number of cases performed was 54 (*Table 1*), Trainee 1: 19 cases, Trainee 2: 16 cases and Trainee 3: 19 cases. Twenty two emergency laparotomies were performed, including seven right-sided resections, three Hartmann's procedures and eight defunctioning stomas. No laparoscopic work was undertaken[5]. This was most apparent in appendicectomy numbers; 11, all performed open. Only one elective case was recorded across all three trainees' logbooks. This was performed in the private sector for cancer with a consultant colleague.

Table 1 Total number of cases performed by all trainees from 1 April to 18 May 2020 divided into operation type and those performed with or without a trainee (P/STU) or direct consultant supervision (STU/STS)

Operation Type	Total number of cases (*n*)	Performed (P/STU)[1] (+/- trainee)	Performed with consultant (STS)[2]
Emergency Laparotomy	**22**	**6**	**16**
Small bowel resection (ischaemic gut)	*2*	-	2
Perforated peptic ulcer	*2*	1	1
Right hemicolectomy	*7*	3	4
Hartmann's procedure	*3*	1	2
Exploratory/abscess drainage	*3*	-	3
Division of Adhesions	*2*	1	1
Removal of foreign body	*1*	1	
Re-look (unspecified)	2	-	2
Defunctioning stoma[3]	8	7	1
Appendicectomy (open)	11	9	2
Hernia repair	2	2	0
Gastrojejunostomy	1	0	1
Examination under anaesthesia of ano rectum +/- incision and drainage of perianal abscess	2	2	-
Abscess (non ano-rectal)	3	3	-
Amputation (digit/AKA/BKA)[4]	3	3	-
Debridement of wound	1	1	-
Debridement of limb	1	1	-
Total Cases	54	35	19

[1]P = Case performed by trainee(s) independently STU = Case performed by trainee(s) with consultant supervisor unscrubbed. [2]STS = Case performed by trainee(s) with consultant supervisor scrubbed. [3]Defunctioning stoma performed following segmental colectomy where anastomosis was not deemed safe in line with current guidance. [4]AKA = Above knee amputation; BKA = Below knee amputation

Our experience shows that despite the significant changes to surgical services during the COVID-19 pandemic, the possibility of operative training remains. Due to the reduction in elective surgery and outpatient clinics, trainees have been deployed to duties that permit more flexible day-to-day working. As a result, within our unit, it has been possible for trainees to maintain some regular operating and training.

This unprecedented time has also allowed for training opportunities that would not otherwise be the norm. For example, the exclusive use of an open approach for appendicitis, which in our unit is usually reserved for children and adults unsuitable for laparoscopy. We recorded only one elective case among the training numbers. While some urgent cancer resections are taking place they are not always accessible to trainees with many units and specialist surgical societies until recently advising dual consultant operating only[6].

COVID-19 is the defining global healthcare crisis of the modern era, unprecedented in scale and impact. There has been a measurable effect on training; less operating, more emergency driven case mix and a predominantly open approach. Although there has been the opportunity to operate, this is not a substitute for full-time training and we anticipate that this exceptional period will result in the majority of trainees having to extend their training. As the UK emerges from the first wave, it will be necessary to

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re-integrate trainees as quickly as possible into elective services to ensure that neither individual nor professional competency is adversely affected[7].

W. English[1,2], P. Vulliamy[3,4], S. Banerjee[5] and S. Arya[6]

[1]Surgical Trainee Year 4 (ST4), N.E. Thames Higher Surgical Training Programme, [2]National Bowel Research Centre, [3]Surgical Trainee Year 6 (ST6), N.E. Thames Higher Surgical Training Programme, [4]Centre for Trauma Sciences, [5]Consultant Colorectal and General Surgeon, Endoscopy and Joint Gastoenterology Lead, SAC (Liason Member) JCST, Royal College Surgical Tutor, ISTP Clinical Lead, and [6]Surgical Trainee Year 8 (ST8), N.E. Thames Higher Surgical Training Programme, London, UK (@aryashob, @sasbanerjee)

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