

# Impact of COVID-19 on operative experience of junior surgical trainees

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Dear Editor

The COVID-19 pandemic presents unprecedented challenges for the fields of public health, general practice, and hospital-based medicine<sup>1</sup>. The postponement of elective surgical procedures<sup>2,3</sup> may also have a significant effect on experience among surgical trainees. This study examined the impact on the operative experience of junior trainees (core training year 1 and 2) across the single Irish surgical training programme (Republic of Ireland).

Restrictions on the volume of surgical procedures have an impact on trainees' operative experience, potentially delaying their acquisition of competence in core operative skills. Understanding the scale of the issue may guide mitigating interventions to reduce the risk of delayed progression or prolongation of training<sup>4,5</sup>.

Anonymized electronic logbook entries from 12 March to 7 July 2019 (control period) were compared with those from 12 March 2020 (lockdown commencement in Republic of Ireland) to 7 July 2020 (COVID period). Some 16 729 operative procedures were recorded during the control period, 11 589 by 58 year 1 (specialty trainee (ST) 1) trainees and 5140 by 55 year 2 (ST2) trainees. This compared with 6223 procedures during the COVID period (62.8 per cent decrease), 4651 recorded by ST1 trainees (59.9 per cent decrease) and 1572 by ST2 trainees (69.4 per cent decrease). The mean number of procedures performed by individual ST1 trainees decreased from 200 (median 207, range 25–348) to 72 (median 56, range 6–226) in the COVID period (64.0 per cent decrease). ST2 trainees recorded a mean of 93 procedures during the control period (median 86, range 19–397) decreasing to 34 (median 26, range 2–158) during the COVID period (63.4 per cent decrease). The mean number of procedures in which trainees were involved decreased in

the COVID period across all levels of complexity (complex major, major, intermediate, minor, and subminor) (Table 1). Similarly, the number of procedures performed by the trainee either independently or under supervision decreased.

The impact across the full training year was also examined (14 July 2019 to 7 July 2020) compared with the previous year (14 July 2018 to 7 July 2019); there was a 20.3 per cent reduction in operative volume year on year.

The authors have quantified the impact of the COVID-19 pandemic and healthcare system response on operative experience among junior trainees. Implementation of a number of changes to mitigate the ongoing impact of the pandemic on training is proposed, including:

- Redeployment of trainees to private sector hospitals where these are used to create additional capacity to address the backlog or capacity constraints. Such placements must be appropriately supervised and trainee experience monitored and prioritized.
- Expansion of the use of simulation in teaching and assessment of technical and non-technical skills as this is known to help move trainees more quickly along the learning curve.
- Exploitation of online teaching modalities to their full potential.
- Formalization of teaching in clinical decision-making and clinical judgement through the use of simulated multidisciplinary teams and case-based discussions.
- Ensuring the physical and emotional well-being of trainees by putting formal support structures in place that are easily accessed by trainees at all times.

**Table 1 Breakdown of level of complexity during time frame 1**

	No. of procedures in which trainees were involved				
	Complex major	Major	Intermediate	Minor	Subminor
ST1 trainees					
Control	11.7 (10, 1–34)	34.8 (30, 1–98)	75.4 (63.5, 8–290)	45.2 (33, 3–196)	33.9 (26, 1–224)
COVID	4.9 (3, 1–22)	18.6 (14, 1–103)	32.0 (19, 1–206)	13.7 (8, 1–115)	9.5 (6.5, 1–72)
% difference	–58.1	–46.6	–57.6	–69.7	–72.0
ST2 trainees					
Control	8.1 (5, 1–57)	15.8 (11, 1–75)	49.3 (41, 1–258)	21.1 (8.5, 1–229)	8.4 (6.5, 1–30)
COVID	7.0 (4, 1–30)	10.1 (6.5, 1–100)	15.1 (9.5, 1–128)	7.3 (4, 1–52)	4.5 (2, 1–16)
% difference	–13.6	–36.1	–69.4	–65.4	–46.4

Values are mean (median, range). Control period, 12 March to 7 July 2019; COVID period, 12 March to 7 July 2020. ST, specialty trainee.

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- Development of flexible training programmes whereby periods of reduced training that arise owing to illness or future pandemics may allow trainees to step back from hospital-based practice in order to focus on non-clinical pursuits.
- Active management of the trainee journey (including altering rotations) to minimize the risk that training may need to be extended for trainees to make up minimum experience numbers.
- Subject to regulatory approval, increasing the focus of training assessment on demonstration of competence rather than time spent or numbers of procedures.

Reflecting on experience during the first COVID-19 surge has highlighted the need for mechanisms to fortify the surgical training system, and provided baseline metrics against which the success of any interventions can be measured.

*Disclosure.* The authors declare no conflict of interest.

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