

Editorial

The need for safe, stable and sustainable resumption of planned surgery in an era of COVID-19

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“You don’t climb mountains without a team, you don’t climb mountains without being fit, you don’t climb mountains without being prepared and you don’t climb mountains without balancing the risks and rewards. And you never climb a mountain on accident - it has to be intentional.”

—Mark Udall

This editorial outlines the principles laid out in the recently released document from the Royal College of Anaesthetists, the Association of Anaesthetists and the Faculty of Intensive Care Medicine on resumption of planned surgical services [1]. The need to pause the majority of planned surgery for almost a year is unique in the history of the UK National Health Service (NHS). Addressing the unmet surgical need that has built up is also a unique challenge. To make resumption safe, stable and sustainable will require planning, patience, understanding and novel ways of working.

More than four million patients are currently awaiting planned surgical procedures, approximately two million of which have been postponed due to the pandemic [Fowler et al., preprint, <https://www.medrxiv.org/content/10.1101/2020.06.10.20127266v2>]. Many more are awaiting non-surgical procedures and the numbers are likely to increase further when delayed referrals and patients with delayed presentations are included. Planned surgery can only restart when the necessary minimum four Ss (space, staff, systems and stuff (equipment)) are in place to support this in a safe, stable and sustainable manner [2].

The pandemic has had a significantly deleterious effect on surgical capacity. The Anaesthesia and Critical Care Covid-19 tracking (ACCC Track) survey [3] showed significant disruption to peri-operative care in two-thirds of hospitals and severe disruption in one quarter. Compared with the corresponding period in 2019, one out of five operating theatres were closed and in those that were open, activity was most commonly around 75% of normal. Almost two-thirds of hospitals were undertaking surgery at external sites, including in the independent sector. There was a 30% decrease in surgical activity overall: an estimated 5500 fewer operations each day across the UK, which is equivalent to more than a million operations lost in a year. Among surgical specialties, the decreases in surgical activity (compared with the corresponding months in 2019) were 36% in planned non-cancer surgery, 35% in planned paediatric surgery, 25% in planned cancer surgery and 10% in emergency surgery. As the two surveys took place before the November lockdown and before increased pandemic surge in December, respectively, they are unlikely to represent peak levels of disruption. It is anticipated that similar degrees of disruption may still be in place when surgical services resume.

Critical care

Critical care capacity was necessarily expanded in response to the pandemic, but this took place without any increase in substantive staffing numbers. During January 2021, the Intensive Care Society reported an increase in intensive care

beds of 2251 compared with January 2020; equivalent to increasing the number of ICUs in the UK by approximately 140 units or 70% [4]. The expansion has been reliant on established staff working increased hours, redeployment of staff and decreased staff-to-patient ratios, thereby increasing work intensity. Planned surgery can resume only when physical space occupied by temporary ICUs has been returned to its original use and bed occupancy has retreated to a pre-pandemic level. The Intensive Care Society has produced a recovery and restitution document [4] to enable the co-ordination of phased recovery of critical care services in parallel with planned surgery and other services [1, 2].

However, it should be recognised that critical care services are unlikely to return to normality for many weeks, and possibly months after other services recover from pandemic pressures [5]. Vaccination will have a notably earlier impact on deaths and hospital admissions than critical care occupancy. This is because patients admitted to ICU with COVID-19 are notably younger (median age 61 years) [6] than those in the other groups (deaths 83 years [7]; hospital admissions 73 years [8]) and the benefits of vaccination of this cohort will not occur until considerably later. We know from previous major incidents that these frequently have a 'long tail' in terms of ongoing work-load, even if triggered by discrete events. The Kerslake Report [9] into the 2017 Manchester Arena bombing attack identified that ongoing surgical work-load of over 400 h meant it took 2 months for the operational performance of the most impacted hospitals to return to 'business as usual'. Patients admitted to ICU with COVID-19 typically stay in hospital for several weeks [6] and so it is likely that the clinical, psychological and operational effects will last long after COVID-19 recedes from the daily attention of the general public.

Perhaps even more impactful than consideration of space, the coronavirus pandemic response necessitated a marked contribution from the peri-operative workforce. In December 2020, more than one in six anaesthetists were not available for work in their normal roles due to redeployment (the vast majority to critical care), self-isolation, illness or shielding [3]. Planned surgery can only resume when all such staff have returned to their usual roles.

While trainees from all specialties have experienced interruption to training in the last year, those in anaesthesia and critical care have been particularly affected by reduced clinical training; interrupted examinations; cancelled rotations; and redeployment to critical care [10]. Although the physical and psychological burdens on these trainees have been substantial, they have made a huge contribution

to the NHS's response to the pandemic. It is essential that resumption of planned surgery accommodates the training needs of doctors in training of all specialties. In addition to this being morally right, there is a practical necessity to ensure a supply of fully trained specialists and recruitment to training schemes as both are essential to the future stability and sustainability of surgical services.

Anaesthetists and intensivists of all grades have worked at levels of excessive intensity and duration in response to the pandemic surges. All staff are consequently physically tired, and some are exhausted. A period of post-surge rest and recuperation is necessary before normal levels of peri-operative activity can resume, both for staff well-being and patient safety. It is essential that staff are enabled and encouraged to take any leave that was deferred through much of 2020 as this will be a key component of their physical and psychological recovery. It should be recognised that this will reduce the availability of staff in anaesthesia and critical care, perhaps over 2 years, and should be accounted for in workforce planning.

Well-being

The psychological impact of the pandemic, both in its intensity and duration, has been profound for many working in patient-facing roles. Those working in critical care are unlikely to be unique in this regard [11], but the measured levels of psychological harm in this group are a matter of significant concern. A survey of the mental health of staff working in critical care during the first COVID-19 surge reported that 45% met the threshold for significant psychological harm including severe depression (6%), post-traumatic stress disorder (40%), severe anxiety (11%) or probable alcohol misuse (7%), and 13% reported recent frequent thoughts of being better off dead or of hurting themselves [12]. These levels of psychological harm are comparable or exceed those reported by troops returning from active military deployment and should not be ignored. Further rounds of the survey suggest even higher levels of psychological harm during the second surge. The impact appears greater for nurses than doctors and in those units exposed to the highest levels of expansion of critical care capacity relative to normal. The Intensive Care Society has produced guidance on maintaining workforce well-being – organisational themes including preventative strategies, leadership and resources are highlighted in this guidance [13].

The greatest drivers of post-traumatic mental ill-health are those present after the event is over, so the period following the second pandemic surge is particularly important [14]. Post-operational stress management has

been used by the British military for many years to minimise the likelihood or gain early identification of post-traumatic stress [15]. The psychological well-being of troops is considered 'core business' and, as such, prevention and management strategies are considered a command, rather than medical, responsibility. Initial 'decompression' is mandatory for all military personnel returning from a minimum of 31 consecutive days in a theatre of military operations. This occurs in a formal, structured and monitored environment in order to rest, relax and reflect before returning to a normal home environment. Once returned to the home base, a period of 'normalisation' occurs for personnel to clear their personal administrative tasks before resuming regular supported activities. Healthcare organisations may find it beneficial to organise local events in conjunction with staff which mirror such established military practices [16] and as outlined recently by Greenberg [14].

Troops returning home after the Falklands conflict were found to have much lower levels of mental health issues if they had sailed back over a 3-week period, rather than flown immediately back to the UK [16]. It has been suggested that we should aspire to a similar 'slow boat home' as the pandemic surge wanes, rather than pressing staff immediately back into frontline roles. We are now faced, along with surgical colleagues, with a new challenge in dealing with the backlog of surgical work-load. This task should not be underestimated: the volume of work is considerable and will likely take several years to complete. It may be wise to invest in a brief period of 2–3 weeks for multi-professional reassessment before the full resumption of planned surgical work. This would enable a holistic physiological and surgical (re)assessment, prioritisation and co-ordination of surgical work-load. Such a planning phase could also provide a well-needed opportunity for some anaesthetic and critical care staff to take a short period of rest and recuperation. We should recognise from the outset that tackling the surgical backlog represents more of an ultramarathon than a sprint and take the opportunity to plan, prepare and pace ourselves for the forthcoming effort.

Waiting lists

Many patients awaiting surgery will now have waited up to, or even more than, a year and this may have significantly altered their circumstances or that of the planned surgery. Patients may have developed new or worsening comorbidities. Their surgical condition may have progressed or improved. Lockdown restrictions and/or

shielding have caused many patients to decondition [17], particularly those at higher risk or aged in their 70s and older [18], thus reducing their fitness for surgery. Some patients' health may have been affected by COVID-19 [19] or the risk of peri-operative infection with COVID-19 may alter their risk/benefit evaluation. Given these considerations, it would seem sensible that for many patients there will need to be a re-evaluation of surgical options or process. Both patient and surgeon may wish to re-evaluate whether the planned surgery is still clinically indicated or desirable. This may involve further surgical, anaesthetic or multidisciplinary assessment and shared decision-making. Further guidance on this topic is needed and is currently in preparation.

Importantly, there is now the opportunity (or even necessity) to rethink how we work. The pandemic has already changed healthcare delivery and led to adaptation and innovation in NHS peri-operative care. The resumption of planned care provides an opportunity to continue the best of this and to adapt and innovate further. There has always been a need to streamline surgical efficiency while maintaining high-quality outcomes, but this requirement is now more important than ever. Adaptations to established pathways will be required and much is likely to change in the coming years. However, modelling surgical recovery on staff working longer or harder using existing models is unlikely to be desirable, achievable or sustainable. Remote and virtual care will inevitably increase but require proper development. Initiatives optimising high-volume, low-risk surgery in settings that avoid hospital admission are likely to be embraced [20]. Higher risk surgery capacity may be improved, and critical care capacity released, by implementation of the Faculty of Intensive Care's recommendations on creating Enhanced Care areas [21].

The resumption of planned healthcare in 2021 is both a necessity and an opportunity, but it will require co-ordination at all levels and acknowledgement and planning that accommodates the physical and psychological needs of those who have worked throughout the pandemic [22] in order to deliver the safe, stable and sustainable service that will be required in the years to come.

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References

1. ICM Anaesthesia COVID-19 hub. Towards safe, stable and sustainable resumption of planned surgical and other procedural disciplines dependent on Anaesthesia and Critical Care services. <https://icmanaesthesiacovid-19.org/towards-safe-stable-and-sustainable-resumption-of-planned-surgical-and-other-procedural-disciplines> (accessed 26/02/2021).
2. Cook TM, Price J, Self R, Sheraton T. Restarting planned surgery in the context of the COVID-19 pandemic. ICM Anaesthesia COVID-19 hub. <https://static1.squarespace.com/static/5e6613a1dc75b87df82b78e1/t/5eac2a173d65cd27933fca88/1588341272367/Restarting-Planned-Surgery.pdf> (accessed 26/02/2021).
3. Kursumovic E, Cook TM, Soar J, et al. Anaesthesia and Critical Care COVID Activity Survey. Round 2. <https://www.niaa.org.uk/article.php?newsid=2154> (accessed 26/02/2021).
4. Intensive Care Society. Recovery and Restitution of Critical Care Services during the COVID-19 pandemic. https://www.ics.ac.uk/ICS/Pdfs/COVID-19/Recovery_and_Restitution_of_ICU (accessed 26/02/2021).
5. Cook TM, Roberts JV. Impact of vaccination by priority group on UK deaths, hospital admissions and intensive care admissions from COVID-19. *Anaesthesia* 2021. Epub 11 February. <https://doi.org/10.1111/anae.15442>.
6. Intensive Care Research and National Audit Centre. ICNARC report on COVID-19 in critical care: England, Wales and Northern Ireland. <https://www.icnarc.org/Our-Audit/Audits/Cmp/Reports> (accessed 26/02/2021).
7. Office for National Statistics. Average age of death (median and mean) of persons whose death was due to COVID-19 or involved COVID-19, by sex, deaths registered up to week ending 2. October 2020, England and Wales. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/adhocs/12376averageageofdeathmedianandmeanofpersonsw hose death was due to covid19 or involved covid19 by sex deaths registered up to week ending 2 october 2020 england and wales> (accessed 24/02/2021).
8. Docherty AB, Harrison EM, Green AC, et al. Features of 20133 UK patients in hospital with covid-19 using the ISCARIC WHO clinical characterisation protocol: prospective observational cohort study. *British Medical Journal* 2020; **369**: m1985.
9. The Kerslake Report. https://www.jesip.org.uk/uploads/media/Documents%20Products/Kerslake_Report_Manchester_Are.pdf (accessed 26/02/2021).
10. Sneyd JR, Mathoulin SE, O'Sullivan EP, et al. Impact of the COVID-19 pandemic on anaesthesia trainees and their training. *British Journal of Anaesthesia* 2020; **125**: 450–5.
11. Greenberg N, Docherty M, Gnanapragasam S, Wessely S. Managing mental health challenges faced by healthcare workers during the covid-19 pandemic. *British Medical Journal* 2020; **368**: m1211.
12. Greenberg N, Weston D, Hall C, Caulfield T, Williamson V, Fong K. Mental health of staff working in intensive care during COVID-19. *Occupational Medicine* 2021. Epub 13 January. <https://doi.org/10.1093/occmed/kqaa220>.
13. Intensive Care Society. Intensive Care as a positive place to work: workforce wellbeing best practice framework. https://www.ics.ac.uk/ICS/Pdfs/Workforce_Wellbeing_Best_Practice_Framework (accessed 26/02/2021).
14. Greenberg N. 'Going for Growth' An outline NHS staff recovery plan post COVID19 (outbreak 1). https://www.rcpsych.ac.uk/docs/default-source/about-us/covid-19/going-for-growth-version-3-05-05-20.pdf?sfvrsn=7cf71c97_4 (accessed 26/02/2021).
15. LFSO 3209 (Third Revise). Land Post Operational Stress Management. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/428920/LFSO_3209_Redacted.pdf (accessed 26/02/2021).
16. Kelly FE, Osborn M, Stacey MS. Improving resilience in anaesthesia and intensive care medicine - learning lessons from the military. *Anaesthesia* 2020; **75**: 720–3.
17. Narici M, De Vito G, Franchi M, et al. Impact of sedentarism due to the COVID-19 home confinement on neuromuscular, cardiovascular and metabolic health: physiological and pathophysiological implications and recommendations for physical and nutritional countermeasures. *European Journal of Sport Science* 2020. <https://doi.org/10.1080/17461391.2020.1761076>. Epub 12 May.
18. Age UK. The impact of COVID-19 to date on older people's mental and physical health. https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/health-wellbeing/the-impact-of-covid-19-on-older-people_age-uk.pdf (accessed 26/02/2021).
19. Huang C, Wang Y, Li X, et al. 6-month consequences of COVID-19 in patients discharged from hospital: a cohort study. *Lancet* 2021; **397**: 220–32.
20. Centre for Perioperative Care. Day surgery: National day surgery delivery pack. <https://www.cpoc.org.uk/guidelines-and-resources-guidelines/day-surgery> (accessed 26/02/2021).
21. Faculty of Intensive Care Medicine. Enhanced Care: guidance on service development in the hospital setting. https://www.ficm.ac.uk/sites/default/files/enhanced_care_guidance_final_-_may_2020-.pdf (accessed 26/02/2021).
22. The King's Fund. Covid-19 recovery and resilience: what can health and care learn from other disasters? <https://features.kingsfund.org.uk/2021/02/covid-19-recovery-resilience-health-care/> (accessed 26/02/2021).