


# Addressing the challenges restoring clinical services during the COVID-19 pandemic by harnessing the alignment of clinical and management leadership: an example from a large colorectal service

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## ABSTRACT

**Background** The COVID-19 pandemic has posed the greatest operational challenge to the English National Health Service since its inception. Elective surgical services have struggled due to the need to protect both staff and patients from viral exposure, and perioperative COVID-19 infection has been associated with significant excess mortality.

**Interventions** In this brief report, we describe how through necessity, it has provided an opportunity to redesign services for the benefit of both patients and organisations, with attendant improvement in activity compared with prepandemic metrics. We present the experience of a large district general hospital, using the department of colorectal surgery as a case study, in responding to the pandemic by restoring services and achieving improved short-term outcomes and processes in newly redesignated facilities.

**Conclusions** These reorganised surgical services represent a 'silver lining' of the pandemic. Clinician-led service restructuring, with positive engagement with staff at all levels, has not only addressed backlogs of urgent elective patients in a safe environment, but has also led to patient benefits and high levels of patient and staff satisfaction.

## BACKGROUND

Frimley Park Hospital is a large district general hospital and the first to receive an 'outstanding' rating from the Care Quality Commission.<sup>1</sup> It is now part of Frimley Health National Health Service (NHS) Foundation Trust, comprising two acute sites and an elective treatment centre, serving a population of 800 000 west of London, UK. Historically, tension existed between the demands of acute services and elective surgical care. Accommodating high numbers of non-elective medical admissions, particularly through winter, led to their placement on surgical wards, diluting the nursing time available to elective surgical patients and leading to the overnight use of the recovery ward for patients with elective surgical cancer preventing their cancellation despite no surgical inpatient beds being available.

The colorectal surgical service has been at the forefront of the development of both laparoscopic and robotic colorectal surgery.<sup>2</sup> Realising some benefits of minimally invasive surgery (MIS), however, has been challenging, partly due to difficulties in implementing effective enhanced-recovery protocols in environments where elective patients

are often colocated with emergency admissions and medical outliers.

Enhanced recovery after surgery (ERAS) relies on the 'aggregation of marginal gains' leading to better outcomes,<sup>3</sup> focusing on making patients fitter for earlier discharge. Although MIS helps to facilitate this, multiple factors such as standardised anaesthetic protocols, optimised nutrition, stoma-training and early mobilisation all play roles.<sup>4</sup> Tensions between elective and emergency care have hindered the ability to maintain an integrated ERAS programme.

We describe, using the colorectal service as a case study, how the freedom afforded to clinical leaders with dedicated senior-management support during the pandemic led not only to the restoration of a clinical service, but also to significant service improvement.

## PANDEMIC RESPONSE

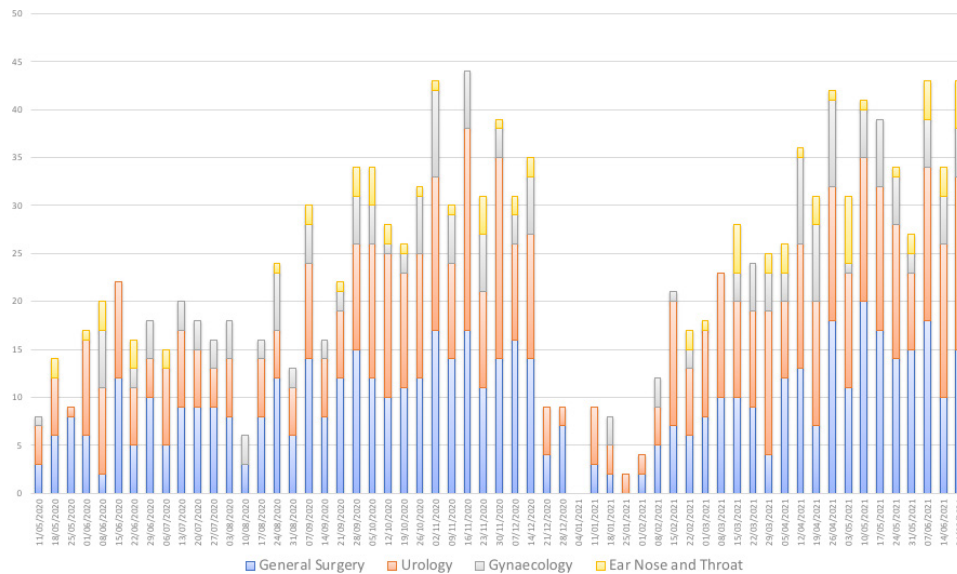
The COVID-19 pandemic almost uniquely led to healthcare being focused on a single condition. Redeployed critical care services, overlaid by the risk of nosocomial transmission and the reported excessive mortality associated with peri-operative COVID-19 infection,<sup>5</sup> led to the cessation of all elective care until a robust plan to address these issues could be designed.

Nosocomial infection was a major concern and national guidance for surgery was initially extremely risk adverse. Due to the potential for laparoscopy being an 'aerosol generating procedure' its use was initially all but abandoned.<sup>6</sup> In terms of colorectal surgery, the lowest risk procedure was often advocated. In practice, guidance entailed careful consideration of whether a surgical procedure should include the fashioning of an anastomosis or not. This meant that patients who previously would have had MIS with no stoma, may have been offered open surgery with an end stoma instead. For the colorectal team at Frimley Park, this option was considered unacceptable. We know that many colorectal cancers are slow-growing and can be managed initially by close observation if radiological and clinical markers of aggressive disease are absent.<sup>7</sup> The local policy was, therefore, to delay surgery, where deemed clinically safe, until a COVID-safe environment (minimising perioperative risk to patients) could be created. The expectation was that the debate regarding the risk



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**Figure 1** COVID-19 secure surgical unit admissions by date and specialty.

of MIS would conclude during the relatively short pause in elective resections.

In anticipation for the call to restart elective surgery,<sup>8</sup> the plan for the location for a ‘COVID-safe’ elective surgical site and pathway was created by senior surgeons, intensivists and anaesthetists, with support from the Trust management structure. Several options were considered, and their relative merits debated before coming to a final decision. These plans were initiated by the medical fraternity rather than the usual central ‘top-down’ instruction.

The options for a clean site/pathway included an external central provider; the use of a dedicated private sector facility staffed by Trust employees; the upscaling of the existing non-acute site within the Trust; and the creation of a clean ‘bubble’ within one of the acute sites. The issues addressed hinged on the balance between providing a facility which was sufficiently distanced and isolated from COVID-19 positive inpatients, while at the same providing the necessary support services required to deliver safe major elective surgery (including intensive care and interventional radiology).

The use of an external, regional hub was not entertained as the logistical and capacity requirements were deemed too cumbersome to restore services in a timely fashion. It was also evident that local providers were following parallel pathways and there was a concern that a central hub would be overwhelmed.

The need to create further Intensive Care Unit (ICU) capacity without any additional anaesthetic support, particularly specialist staff, precluded the repurposing of our non-acute site or a private provider. This left the ‘clean-bubble’ model within an acute site as the only viable option for major elective surgery, a view held by most of the clinicians, and accordingly endorsed and supported by the senior management team.

The organisation and structure of this area have been previously described.<sup>9</sup> In brief, a stand-alone day-surgery unit, within the hospital footprint, connected to the main site but which could, crucially, be isolated within it, with separate entrances and accommodation, was reconfigured within 2 weeks including provision of adequate social distancing. Staff were initially COVID-swabbed weekly and required to be separate from acute (and therefore ‘potentially infected’) hospital zones. Critically,

all colorectal work for the entire Trust was directed through this facility, aggregating activity from our two acute sites.

## OUTCOMES

The success of this unit was the freedom to make rapid decisions with senior management support. These decisions included the creation of entirely new protocols such as infection control, staff and patient testing; staff rotas; rapid authorisation of necessary capital expenditure and the ability to rehouse complex equipment such as surgical robots. From the first day of re-establishing colorectal surgery, MIS was the default position for all requiring bowel resection, with robotics for rectal surgery. This aligned with the processes in place prior to the COVID-19 reorganisation.

The issue of ‘delay’ to treatment is important, not least in the context of cancer. At the time of ‘lockdown’ at the end of March 2020, 15 patients from the Frimley Park site were awaiting major resection for cancer. The surgical unit opened on 12/5/20 and the interval between diagnosis and surgery ranged from 54 to 137 days, median (IQR) 94 (68–121) days. Crucially, there were no cases in which the final histology was upstaged in comparison to their initial staging investigation. This local ‘backlog’ of colorectal cancer resections was cleared by the end of July. In addition, newly diagnosed cancers and urgent benign cases were also managed. Theatre utilisation, despite additional COVID-19 precautions, was high at 71%. In parallel, the urological surgeons, gynaecologists and ENT surgeons adopted a similar pathway using the same facility.

Unexpected benefits, however, included accelerated postoperative recovery of the colorectal patients. The median length of stay for rectal cancer patients dropped from 6 to 4 days.<sup>9</sup> In a dedicated postoperative area with only elective surgical patients, staff could concentrate on ERAS. This in turn led to high levels of staff and patient satisfaction despite the fact that visitors were not allowed on the unit, and there were none of the usual hotel services such as bedside entertainment systems. Surgical complications were low,<sup>10</sup> and pathology reports showed no evidence of incomplete resections.<sup>9</sup>

Additional factors contributing to these improvements included dedicated consultant input. The initial guidance was for

dual-consultant operating, and the need for 'COVID-clean' post-operative cover, meant that the level of direct consultant input to postoperative care was high, with twice daily wards rounds and decision making leading to timely interventions such as removal of catheters and other potential impediments to discharge. Such levels of medical input have long been part of the practice of the rectal cancer team at Frimley Park, and so this alone cannot explain the 2-day reduction in median length of stay. However, dedicated nursing and allied healthcare support, focusing on a single condition undoubtedly improved progression along the patient pathway.

The perception of the 'COVID-risk' from hospital environments may have motivated some patients to push for an early discharge. However, some were keen to stay, fearing that the restrictions of lock-down and social-distancing could lead to less support at home, and that precipitous readmission would be to the main hospital in order to preserve the sanctity of this COVID-clean unit.

Inevitably, there was a challenge in maintaining outcomes over a protracted pandemic. Some pressures stemmed from increasing utilisation of a relatively small unit leading to reductions in nursing time per patient. As the volume of cases increased the success of enhanced recovery became diluted with the rectal cancer median length of stay rising to 5 days, but still not reaching its prepandemic value.<sup>11</sup>

The variation in utilisation over time by specialty is shown in figure 1. Admission volumes were closely related to the burden of local COVID-19 cases. Case volume can be seen to dip slightly during the autumn surge as the need to reduce hospital footfall raised the threshold for elective admissions. Frimley Health was among the most hard-pressed English NHS trusts in the spring 2021 surge (4839 patients October to 20 March 2021) and this is reflected in the marked reduction in January/February admissions. Crucially though, the decision to restrict admissions and protect anaesthetic and critical care nursing staff was clinically led. The view was that to restrict surgical throughput voluntarily, rather than wait for a senior management decision to do so, meant that as soon as the critical care and anaesthetic teams were ready urgent cancer surgery restarted, with case volume rapidly recovering. In only 1 week over new year period were the cancer surgeons unable to operate, and since there never had to be a formal instruction to stop there was no need to ask for the somewhat harder decision to restart.

Inevitably, as the health service moves into the 'new-normal' of the post-COVID era there are difficulties in maintaining some of the benefits of the operating model described. The relative relaxation of separation of acute/elective services has in many ways facilitated the restoration of more normal surgical care and training of juniors, but increasing pressure of emergency admissions and the challenge of addressing the elective backlog are significant. These changes are occurring on the background of the introduction of a new electronic patient record to the trust which will impact on waiting times and service delivery in the short-term. In spite of these pressures the ring-fencing of elective surgical patients has continued. This allows dedicated nursing for elective postoperative patients with minimal need for the disruption of bed moves and the distractions of emergency admissions and medical outliers. We feel that this provides the best environment to promote enhanced postoperative recovery for elective patients and should continue. Integrating these changes into the new electronic environment within the trust will be key, but in some ways the absolute requirement for clinician engagement

in such infrastructure changes leads to another opportunity to embed positive outcomes from the pandemic into routine service delivery.

## CONCLUSIONS

Our experiences highlight how providing freedom to clinical leaders, supported by an engaged and responsive management structure, allows rapid clinical and operational improvement, allowing significant challenges in healthcare delivery to be overcome. The ongoing issue is for the Trust to sustain these improvements which may turn out to be the 'silver-lining' of the COVID-19 pandemic. However, just as significant improvements can be brought about by aggregating multiple small changes, these can easily be eroded by incremental degradation of the new structure. This must be resisted.

This is just one example of significant improvement precipitated by necessary reconfiguration. It does beg the question why the incentives to achieve this and the processes needed to overcome the barriers to this change could not be formulated prior to the pandemic. An important lesson appears to be that significant alignment of purpose leads to the rapid ability to enact change.

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## REFERENCES

- Care Quality Commission. Frimley Park Hospital CQC inspection report 2014. Available: <https://www.cqc.org.uk/news/releases/frimley-park-hospital-nhs-foundation-trust-awarded-first-outstanding-rating-chief>.
- Jayne D, Pigazzi A, Marshall H, et al. Effect of robotic-assisted vs conventional laparoscopic surgery on risk of conversion to open laparotomy among patients undergoing resection for rectal cancer: the ROLARR randomized clinical trial. *JAMA* 2017;318:1569–80.
- Basse L, Hjort Jakobsen D, Billesbølle P, et al. A clinical pathway to accelerate recovery after colonic resection. *Ann Surg* 2000;232:51–7.
- Munk-Madsen P, Eriksen JR, Kehlet H, et al. Why still in hospital after laparoscopic colorectal surgery within an enhanced recovery programme? *Colorectal Dis* 2019;21:1438–44.
- COVIDSurg Collaborative. Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study. *Lancet* 2020;396:27–38.
- Griffin SMA, Taylor D, Mealy K. *Updated general surgery guidance on Covid-19*. London: UK: RCS England, 2020. <https://www.rcseng.ac.uk/coronavirus/joint-guidance-for-surgeons-v2/2020>
- Lord AC, D'Souza N, Pucher PH, et al. Significance of extranodal tumour deposits in colorectal cancer: a systematic review and meta-analysis. *Eur J Cancer* 2017;82:92–102.
- Stevens SP. *Second phase of NHS response to COVID19*. England: NHS, 2020. <https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/04/second-phase-of-nhs-response-to-covid-19-letter-to-chief-execs-29-april-2020.pdf>
- Huddy JR, Freeman Z, Crockett M, et al. Establishing a "cold" elective unit for robotic colorectal and urological cancer surgery and regional vascular surgery following the initial COVID-19 surge. *Br J Surg* 2020;107:e466–7.
- Huddy JR, Crockett M, Nizar AS, et al. Experiences of a "COVID protected" robotic surgical centre for colorectal and urological cancer in the COVID-19 pandemic. *J Robot Surg* 2022;16:59–64. doi:10.1007/s11701-021-01199-3
- Huddy JR, Freeman Z, Vaughan S, et al. Challenge of maintaining the initial benefits of a "cold" elective surgical unit established during the first COVID-19 peak. *Br J Surg* 2021;108:e194–5.