

Establishing a “cold” elective unit for robotic colorectal and urological cancer surgery and regional vascular surgery following the initial COVID-19 surge

Editor

Preparation for the current coronavirus pandemic resulted in the cessation of elective surgery at NHS hospitals¹. Uncertainty exists as to the best way to safely re-introduce elective surgery during this period of increased risk². However, a failure to do so will inevitably lead to more patients who experience adverse outcomes, not through COVID-19 itself but as a result of delays to treatment, and potential progression of other conditions such as cancer³. Recommendations from the Royal College of Surgeons of England and specialty associations include using “cold” operating sites, screening of patients and staff and responding to fluctuating local resource availability⁴.

We report our experience of establishing a “cold” unit for major elective surgery (priority 2 and 3 patients) at Frimley Park Hospital where there is an established robotic surgery programme and tertiary referral services for renal and vascular surgery. Separate pathways were already in place for short-stay procedures.

A self-contained day surgery unit with 16 patient bays (reduced to 10 to enhance social distancing measures), two theatres and a post-operative recovery ward was utilised. Two recovery beds were identified as high dependency beds. All staff had weekly swab testing for coronavirus and were excluded from the main hospital. All patients self-isolated for 14 days prior to admission and had both a coronavirus swab and initially a chest CT until this requirement was removed from national guidance.

Personal protective equipment was used for every patient interaction.

Table 1 Patient characteristics for colorectal, vascular and urology patients (n = 29). (Four ear, nose and throat patients and one gynaecology patients also went through the pathway)

Age Median (IQR)	64 (54-74)
Male n (%)	14 (48)
Pathology	
Colorectal Cancer	13
High Risk Rectal Polyp	1
Renal Cancer	8
Benign Urology	3
Critical Limb Ischaemia	3
End stage renal failure	1
Operation	
Colorectal	Right hemicolectomy (6) Low Anterior Resection (4) Sigmoid Colectomy (3) Left Hemicolectomy (1)
Urology	Partial Nephrectomy (6) Radical Nephrectomy(1) Simple Nephrectomy (1) Nephro-ureterectomy (1) Pyeloplasty (1) Percutaneous Nephrolithotomy (1)
Vascular	Femoral-Above Knee Bypass (1) Femoral-Above Knee Bypass and Femoral Endarterectomy (1) Right Above Knee Amputation (1) Left Radiocephalic fistula (1)
Access	Colorectal Laparoscopic – 9 Laparoscopic Converted to open – 1 (bulky invasive tumour) Robotic – 4 (Low Anterior Resections) Urology Robotic – 8 Laparoscopic – 2 Endoscopic - 1
Priority Scores⁵	
P2	14 (48)
P3	15(52)
Vulnerability Scores⁵	
V1	16 (55)
V2	13 (45)
Length of Stay (days)	Colorectal: 3.5 (3-4)
Median (IQR)	Urology: 1 (1-2) Vascular: 3.5 (1.5-5.5)
Complications (n)	Colorectal Blood transfusion (1) Atelectasis (1) Post-op pyrexia (1) Ileus requiring parental nutrition (1) Urology Hyponatraemia – conservatively managed (2) Ileus (1) Vascular Urinary Tract Infection (1)
Readmissions (n)	Colorectal Abdominal bruising and nausea (CT demonstrated no intramuscular haematoma) – 2 day readmission (1) Urology Abscess post nephrectomy (for chronically infected kidney with staghorn calculus) requiring radiologically guided percutaneous drain – 5 day readmission (1) Pain from nephrostomy site post percutaneous nephrolithotomy – 2 day readmission (1)

Pathways were in place for transfer of patients to the main hospital if cross-sectional imaging or intensive care was required. Access was available to clinical laboratory services and blood bank.

The “cold” unit became operational on the 12th May 2020. 34 patients underwent surgery in the unit during the first three weeks (*Table 1*). There was no evidence of coronavirus transmission. Three patients required readmission to the main hospital. Patient feedback was excellent with 94% of patients who completed the trust inpatient survey rating their care as “excellent”.

The median length of stay was 3.5 days for colorectal surgery. This compares to five days for laparoscopic segmental colonic resection prior to COVID-19. The potential reduction may be explained by the relatively high nurse to patient ratios, high levels of consultant input, and a dedicated department where staff were able to focus on peri-operative care and enhanced recovery without the traditional ward mix of elective and emergency patients.

In COVID planning, the senior trust team had to attempt to mitigate

numerous risks in instigating a “cold” elective pathway and considered the use of independent sector providers. The proximity to acute services and the fact that there were insufficient critical-care staff for an off-site “mini” ITU led to the conclusion that an isolated “cold bubble within a contaminated hospital” was the best option for our individual circumstances. Working in a contained unit proved to be efficient and staff morale was high. This model has the ability to flex and in the event of further “surges” can be suspended and rapidly re-implemented.

Jeremy R Huddy¹, Zoe Freeman²,
Matthew Crockett³, Nancy
Hadjievangelou⁴, Neil Barber³,
David Gerrard⁴ and Henry S Tilney¹

¹*Department of Colorectal*

Surgery, Frimley Park Hospital,

²*Department of General Surgery,*

*Frimley Park Hospital, ³Frimley Renal
Cancer Centre, Frimley Park Hospital,*

*and ⁴Department of Vascular Surgery,
Frimley Park Hospital,*

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