

Emergency Laparotomy and Major Intra-abdominal Laparoscopy

Enhanced Surgical Treatment and Recovery Programme

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Policy Executive Owner:	Clinical Director of Surgery
Designation of Author:	Mr H Mukhtar, Dr S Gillis, N Pooran
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Version Control Sheet

Version	Date	Author	Status	Comment
1.0	Feb 2015	Dr. S. Gillis Mr. H. Mukhtar Natasha Pooran	LIVE	Approved at CGC 25 February 2015

Abbreviations contained within this guideline

LOS	Length of Stay
NHS	National Health Service
UK	United Kingdom
IV	Intra Venous
NJT	Nasojejunal Tube
VTE	Venous Thromboembolism
NSAIDs	Non-steroid anti-inflammatory drug
NAC	N-acetylcysteine
AKI	Acute Kidney Injury
FBC	Full Blood Count

➤ **Criteria for use**

All patients in whom it is predicted there will be a requirement for an emergency laparotomy or major intra- abdominal laparoscopy

➤ **Background/ introduction**

Studies reported in Denmark have achieved length of stay (LOS) as low as 3 days after elective colorectal surgery. Whittington Health has an established enhanced recovery program for elective colorectal patients. The benefits of such a programme can be adapted for emergency laparotomy or major intra- abdominal laparoscopy patients.

Patients who have emergency laparotomies have a high mortality. In one study (1) mortality at 30 days for all patients was 14.9%, and 24.4% in those over the age of 80.

In the UK, 170,000 patients undergo higher risk non-cardiac surgery each year (2). Of these patients, 100,000 will develop significant complications resulting in over 25,000 deaths (2). General surgical emergency admissions are the largest group of all surgical admissions to UK hospitals and account for a large percentage of all surgical deaths (3).

Emergency cases alone presently account for 14,000 admissions to intensive care in England and Wales annually. The mortality of these cases is over 25% and the intensive care unit cost alone is at least £88 million (4).

Patients for laparotomy present for surgery with acute fluids and electrolyte imbalance due to the combined effects of inadequate intake related to fluid loss, which may be superimposed on reduced renal reserve and (in the emergency setting) sepsis and third space losses. They require skilled resuscitation, careful perioperative monitoring of cardiovascular parameters and fluid balance. This needs to commence preoperatively, and be continued into the intra-operative and post operative period (5).

Sepsis is frequently present in surgical patients and is a leading cause of death for patients having laparotomies. It may be part of the patient's presenting complaint, or it may occur post operatively.

➤ Inclusion/ exclusion criteria

- **Inclusion criteria**

All patients who need an emergency laparotomy or major intra-abdominal laparoscopy (>18yrs of age) or who have been admitted and may require surgery.

➤ Clinical management

Preoperative Care – Surgeons

Early diagnostics and surgery within timelines delineated below (consultant-led care).

Sepsis is common in patients requiring laparotomies. Always consider whether a patient presenting with abdominal pain has sepsis. If sepsis is present please follow the sepsis checklist, which can be viewed on Anglia ICE (create link). Do not wait until theatre to give antibiotics if sepsis is present. If sepsis is believed to be present the Royal College of Surgeons advises the following times for surgical drainage:

Septic shock - immediate

Severe sepsis/ organ dysfunction- as soon as possible and within 6hrs of onset

Sepsis- as soon as possible and within 18 hrs of onset (starting between hours 0700-2200)

Infected source, no SIRS present- as soon as possible and within 18hrs of onset (starting between hours 0700-2200)

If surgery is likely to be delayed for any length of time or the patient is unstable early consultation by the critical care team should be ensured to help in the patient's preoperative optimisation, and the need for critical care admission should be considered. However the Royal College of Surgeons comment that moving a patient to critical care does not treat the source of sepsis and focus must remain on timely definitive care.

Hypovolaemia is frequently present in patients presenting for laparotomies. Ensure patient is adequately hydrated.



Please see Whittington Health Guideline:

Intravenous Fluid Management: For General Medical and Surgical Patients

If patient is non-fluid responsive get early advice from anaesthetic/ITU or Critical Care Outreach Team.

If **CT scan with contrast** is planned, ensure good hydration prior to and after the scan. There is no benefit to administering N-acetylcysteine (NAC) or bicarbonate.

Consent and Risk Assessment: The Royal College of Surgeons has recommended that objective assessment of risk should become routine. Importantly this needs to be communicated to the patient and family and also used to trigger joint advance planning specific to that patient. P-possum scoring is one method recommended and should be used to estimate the patient's risk. This is the most well validated and simple scoring system to look at risk prediction. However P-possum does include surgical findings and so the surgeon completing needs to complete P-possum predicting the likely surgical findings. This can then be amended postoperatively. P-possum scoring is freely accessible on the internet at <http://www.riskprediction.org.uk/possum.php>. The estimated P-possum score should be calculated, documented in the patient's notes and then used as part of the discussion when consent is sought

Pain should be assessed and addressed preoperatively. This should be assessed hourly and treated according to WHO Analgesia ladder. Regular paracetamol should be started and opioids used as required. If the surgical team are unable to manage pain prior to surgery or there is a delay in surgery advice should be sought. The acute Pain team can be contacted on bleep 2688 Mon-Fri 0800-1800, and out of hours bleep on call anaesthetist (bleep 3301)

Nil by mouth (NBM) from solids 6 hours pre-operative but may have clear fluids up to 2 hours before surgery unless otherwise stated. If a patient presents who requires immediate surgery then clinical need for surgery may well override NBM requirements.

If clinical and/or imaging signs of ileus/full stomach, **insert nasogastric tube** (NGT) to decompress stomach preoperatively. The NGT used should be a medicina ENTRAL size 16F and this should be put on free drainage, after initial aspiration of stomach contents.

If the patient is **subacute**(e.g. inflammatory bowel disease) and does not have diabetes, the doctor should prescribe 4 carbohydrate Nutricia 'Pre-Op' drinks the day before surgery and 2 carbohydrate Nutricia 'Pre-Op' drinks the day of surgery. They should not be given within 2 hours of surgery. (A patient information sheet can be provided by the Enhanced Recovery team to patients taking carbohydrate loading drinks with information on how to take these, timings and contact details for the Dietician if required)

Perioperative nutrition support is important in this group of patients and the use of the enteral route (oral diet, fluids and supplements or enteral tube feeding should be actively encouraged and a referral should be made to the dietitian as appropriate. Evidence supports preoperative carbohydrate loading which has been shown to be effective at reducing preoperative thirst, hunger and anxiety as well as postoperative insulin resistance as a result of maintaining a metabolically fed state at the time of surgery. This can translate into maintenance of lean muscle mass and potentially a reduction in LOS (18)

In hours additional preoperative advice & preparation by **Enhanced Recovery nursing staff** is available. Their role is to:

- Manage patient expectations
- Inform patient of expected perioperative care pathway.
- Implement stoma education/management (involve stoma nurse specialist at earliest opportunity)
- First line nutritional advice

Discharge planning to be commenced as early as possible as many of these patients may have post-discharge nursing care and social needs.

Intraoperative Care

These procedures have a predicted mortality, and should be conducted under the direct supervision of a consultant surgeon and consultant anaesthetist unless the responsible consultants have satisfied themselves that their delegated staff have adequate competency, experience, manpower. Doctors in training and middle grade doctors should refer to their departmental guidance on when to call a consultant.

Surgeons

Laparoscopic surgery carried out as 1st choice unless otherwise indicated. Minimally invasive surgery reduces surgical stress from inflammation but has no effect on endocrine-metabolic responses (8). There are also benefits with reduced analgesic requirements post operatively. However, laparoscopic surgery may also worsen vasomotor instability and sensible dialogue will be required between surgical and anaesthetic teams

Anaesthetics

Intravenous antibiotics should be administered on induction, unless administered earlier.

Goal directed fluid therapy is essential in these patients care, and an oesophageal doppler must be used to guide IV fluid therapy intraoperatively. Both excessive and inadequate intravenous fluid administration in the peri-operative and post-operative period can be harmful, particularly in the elderly (5), (10). Either Hartmann's or geloplasma in a bolus volume of 500mL may be used for this volume loading. There is no clear evidence which is the better fluid to use (6). Fluid should be administered according to the algorithm attached to the Doppler machines. Doppler readings,

alongside ABG and lactate measurements, and other clinical indices should be used to assess and monitor patients regularly intraoperatively, and used to guide fluid therapy and other cardiovascular management.

If a **central venous catheter** (CVC) is inserted for access or administration of vasoactive drugs, one port should be reserved and labelled by the anaesthetist for possible parenteral nutrition.

Intra operative **analgesia** to be decided by anaesthetist. Thoracic epidural and other regional methods may be considered unless contraindicated (sepsis, likely vasomotor instability, etc), or there is patient refusal. Large volume dilute local anaesthetic infiltration should be used if epidural is not used, or alternatively transversus abdominis plane (TAP) blocks may be performed.

Use **short acting anaesthetic agents** where possible in addition to thoracic epidural or regional analgesia unless contra indicated or patient refusal. Postoperative pain control by thoracic epidural anaesthesia reduces postoperative ileus duration (12), (13).

Ensure patient is kept **normothermic** as per NICE guidance. Prevention of intra-operative hypothermia reduces cardiac complications, bleeding and infection (9), (6).

A medicina ENTRAL size 16F tube may be inserted if **gastric drainage** is required. This allows similar drainage to a Ryles tube. It is NPSA (National Patient Safety Agency) compliant for feeding and administration of drugs once position is confirmed as correct by pH <5.0 or NGT check Xray.



Please see Whittington Health Guideline:

'Nasogastric tube feeding for adults'

A double lumen **nasojejunal tube** may be inserted intraoperatively, where there is a high likelihood that there may be an ileus or failure to feed postoperatively. Nasojejunal tubes are kept in the emergency theatre. The nasojejunal tube should be inserted in the anaesthetised patient and the tip guided into the jejunum by the operating surgeon. There is good evidence that early jejunal feeding is associated with a greater success of enteral feeding in comparison to gastric feeding (11), (12).

Postoperative Care

Anaesthetics

Admission to **critical care** for overnight intensive recovery should be considered for all patients by the surgical and anaesthetic team. If the patient is deemed safe to have their care continued on the ward, then the patient may be referred to the critical care outreach team (CCOT) on bleep 2837. At night this bleep is carried by the ITU SHO.

Postoperative nausea and vomiting is frequently present, and should be treated with targeted anti-emetics. 1st line antiemetic for colorectal patients is cyclizine, unless there are other contraindications.

Paracetamol to be prescribed regularly

Paracetamol combined with **non-steroidal anti-inflammatory drugs** (NSAIDs) provide effective analgesia which is opiate sparing during the postoperative period (14). However emergency patients have a greater risk of developing acute kidney injury (AKI) with the use of NSAIDs in the presence of hypovolaemia and sepsis. Additionally there are greater gastrointestinal risks for patients such as development of upper gastrointestinal ulceration. These risks need to be balanced with the benefits of improved analgesia. The use of NSAIDs should be discussed with the surgical team prior to prescription

Surgeons/ITU

If confirmed **septic** source at laparotomy continue antibiotics and discuss with microbiology to ensure an appropriate postoperative antibiotic plan is made.

Metoclopramide 10mg to be prescribed twice daily.

Regular **pantoprazole** 40mg IV OD should be prescribed until resumption of normal diet. Once the patient is absorbing this can be substituted with lansoprazole 30mg O/NG OD.

Nutrition and Enteral Tubes

Unless contraindicated, **oral intake, NG or NJ feeding** should commence within 24 hours post operatively, unless otherwise indicated by the surgical team. This nutrition plan should be documented in the surgical notes, and should include directions for oral intake and the use of NG or NJ tubes, including their insertion and removal. This plan will depend on gastric volumes aspirated, surgical pathology, bowel and stomal opening and ability to eat. This should be updated each time the patient is seen by the surgical team, and should be discussed with the surgical consultant responsible for the patient.

While the patient is on **ITU this should be communicated** and discussed with the ITU medical team directly. Input additionally may be sought from the Dietitian, and, additionally the Nutrition Team in cases requiring Parenteral Nutrition.

When commencing oral intake (fluids only or diet and fluids), surgical team to prescribe **Ensure Compact** one bottle three times daily. These are available in theatres, on ITU and all wards. These supplements are not to be continued on discharge from hospital unless clinically justified with the Dietitian.

If **nasojejunal tube** is considered being inserted postoperatively by the Nutrition Team this needs to be discussed with the Consultant Surgeon.

If the patient has poor oral intake post operatively and likely low NG aspirates a **12Fr NPSA compliant Corflo NGT** should be inserted. This NGT can be used for feeding, drug administration and fluids after appropriate checking

Use of **VTE prophylaxis** should be assessed perioperatively. Consideration of analgesic method should occur.



Please see Whittington Health Guideline:
Thromboprophylaxis in adult surgical patients

VTE prophylaxis

Thromboprophylaxis should be continued for 28 days post-op for all patients who have had major cancer surgery in the abdomen/pelvis and should also be considered for other laparotomy patients who are thought to be high risk (e.g. likely poor mobility)

The agreed North London policy on HIT (heparin induced thrombocytopenia) monitoring is that it is only required for prophylactic doses for patients with cancer and therefore a baseline platelet count, count at 4-7 days and count at 10-14 days should be done. There is no need for counts after 14 days. Therefore a full blood count (FBC) needs to be organised for these patients on these days. If the patient is discharged prior to 10 days post laparotomy then the GP will need to follow up and ensure these FBCs are done. In the discharge summary it should be documented exactly when FBCs are required and a baseline platelet count should be put on the discharge summary for the GPs reference. The patient needs to be given a sharps bin.

Full details are on the North London Joint Formulary Committee site guideline:
http://ncljfc.org.uk/uploads/3/2/0/9/3209562/low_molecular_weight_heparin_jan_2014.pdf

Nursing and Physiotherapy Staff. Early mobilisation.

Aims should be:

- To sit out within 6 hours of completion of surgery
- To walk a minimum of 60m 4 X per day from Day 1

➤ **Contacts (inside and outside the Trust including out-of-hours contacts)**

	Daytime	Out of Hours
Enhanced Recovery Nurses (8-4)	Ext: 3496/3497 Bleep 2713	Surgical team via switch
Surgical SPR	Bleep 3370	Via Switch
Anaesthetic	Bleep 3301	Bleep 3301
Acute Pain Nurses	Ext: 5277 Bleep 2688	Bleep 3301
ITU Registrar	Bleep 2613	Bleep 2613
Critical Care Outreach	Bleep 2837	Bleep 2837

➤ **References (evidence upon which the guideline is based)**

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➤ **Compliance with this guideline (how and when the guideline will be monitored e.g. audit and which committee the results will be reported to) Please use the tool provided at the end of this template**

To be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval

		Yes/No	Comments
1.	Does the procedural document affect one group less or more favourably than another on the basis of:		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
	• Disability - learning disabilities, physical disability, sensory impairment and mental health problems	No	
2.	Is there any evidence that some groups are affected differently?	No	
3.	If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?	No	
4.	Is the impact of the procedural document likely to be negative?	No	
5.	If so can the impact be avoided?	N/A	
6.	What alternatives are there to achieving the procedural document without the impact?	N/A	
7.	Can we reduce the impact by taking different action?	N/A	

If you have identified a potential discriminatory impact of this procedural document, please refer it to the Director of Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact the Director of Human Resources.

Checklist for the Review and Approval of Procedural Document

To be completed and attached to any procedural document when submitted to the relevant committee for consideration and approval.

	Title of document being reviewed:	Yes/No	Comments
1.	Title		
	Is the title clear and unambiguous?	Yes	
	Is it clear whether the document is a guideline, policy, protocol or standard?	Yes	
2.	Rationale		
	Are reasons for development of the document stated?	Yes	
3.	Development Process		
	Is it clear that the relevant people/groups have been involved in the development of the document?	Yes	
	Are people involved in the development?	Yes	
	Is there evidence of consultation with stakeholders and users?	Yes	
4.	Content		
	Is the objective of the document clear?	Yes	
	Is the target population clear and unambiguous?	Yes	
	Are the intended outcomes described?	Yes	
5.	Evidence Base		
	Are key references cited in full?	N/A	
	Are supporting documents referenced?	N/A	
6.	Approval		
	Does the document identify which committee/group will approve it?	Yes	
7.	Dissemination and Implementation		
	Is there an outline/plan to identify how this will be done?	Yes	
8.	Document Control		
	Does the document identify where it will be held?	Yes	
9.	Process to Monitor Compliance and		

	Title of document being reviewed:	Yes/No	Comments
	Effectiveness		
	Are there measurable standards or KPIs to support the monitoring of compliance with and effectiveness of the document?	Yes	
	Is there a plan to review or audit compliance with the document?	Yes	
10.	Review Date		
	Is the review date identified?	Yes	
	Is the frequency of review identified? If so is it acceptable?	Yes	
11.	Overall Responsibility for the Document		
	Is it clear who will be responsible for co-ordinating the dissemination, implementation and review of the document?	Yes	

Executive Sponsor Approval

If you approve the document, please sign and date it and forward to the author. Procedural documents will not be forwarded for ratification without Executive Sponsor Approval

Name		Date	
Signature			

Relevant Committee Approval

The Director of Nursing and Patient Experience's signature below confirms that this procedural document was ratified by the appropriate Governance Committee.

Name		Date	
Signature			

Responsible Committee Approval – only applies to reviewed procedural documents with minor changes

The Committee Chair's signature below confirms that this procedural document was ratified by the responsible Committee

Name		Date	
Name of Committee		Name & role of Committee Chair	
Signature			

Tool to Develop Monitoring Arrangements for Policies and guidelines

What key element(s) need(s) monitoring as per local approved policy or guidance?	Who will lead on this aspect of monitoring? Name the lead and what is the role of the multidisciplinary team or others if any.	What tool will be used to monitor/check/observe/Assess/inspect/ authenticate that everything is working according to this key element from the approved policy?	How often is the need to monitor each element? How often is the need complete a report ? How often is the need to share the report?	What committee will the completed report go to?
Element to be monitored	Lead	Tool	Frequency	Reporting arrangements
Inclusion criteria Clinical Management	Mr Hasan Mukhtar	Audit adherence to guideline for all patients on whom it is predicted there will be a requirement for emergency laparotomy and major intra-abdominal laparoscopy.	Monthly	Enhanced Recovery Board General surgical meeting and department of surgical meeting.
Morbidity and mortality meetings	Dr Jane Silk	Note case review	3-monthly	SCD Quality and Safety Committee

