Who should read this document?

- Anaesthetists who manage patients undergoing major urology or gynaecology surgery
- Nursing staff who care for Urology and gynaecology patients postoperatively
- Urologists and Gynaecologists

Key Practice Points

- Enhanced Recovery is a multimodal approach for the care of surgical patients
- The pathway starts pre-operatively and continues until after patient discharge
- Salford has a dedicated ERAS nurse for Urology and Gynaecology
- Patient education is key in the ERAS pathway
- A weekly preop assessment clinic specifically for Urology/Gynaecology patients is run by consultant anaesthetists
- Carbohydrate pre-loading is beneficial to patients
- Bowel prep should be avoided if possible
- Surgical incisions should be as small as possible, drains and nasogastric tubes should be avoided if possible
- Goal directed fluid therapy should be considered to optimise fluid status, low volumes of fluid therapy are beneficial.
- Multimodal analgesia strategies should be employed to reduce postoperative pain
- Avoidance of operative nausea and vomiting is important to promote recovery
- Early mobilization and nutrition are important components of ERAS

Background

Enhanced Recovery is an evidence based, multi-modal approach to care for elective surgical patients. The principles are to reduce unnecessary interventions and to improve analgesia, hydration status and nutrition, as well as to achieve early postoperative mobilization of patients. This approach has
been shown to reduce length of stay and reduce the incidence of complications after surgery.

**GUIDELINE**

The important aspects of enhanced recovery programmes are summarized below.

**Pre-op Assessment**

All ERAS urology and gynaecology patients are seen in the nurse lead pre-op assessment clinic.

In addition an Anaesthetic Consultant lead Urology pre-op clinic takes place every week, the aim being that all major urological surgery patients are seen by a Consultant Anaesthetist (Dr Gallie/O’Connor). High risk patients may be considered for pre-operative CPEX testing.

Patients will also see the Enhanced Recovery Specialist Nurse who will discuss the principles of ERAS including fasting, nutrition, analgesia, complications and the need for early mobilization.

Importantly the patient’s expectations of their recovery are managed and they are given targets to achieve in terms of mobilization, nutrition and discharge.
**Admission and Pre-medication**

Patients should be admitted on the day of surgery whenever possible.

Bowel preparation should be avoided in order to prevent dehydration and to promote normal nutrition up to 6 hours prior to surgery. Patients are encouraged to drink water up to 2 hours prior to surgery.

Sedative pre-medication should be avoided if possible in enhanced recovery patients.

When possible patients should be encouraged to walk to the operating theatre.

**Carbohydrate Loading**

Carbohydrate loading pre-operatively has been shown to reduce anxiety, improve hydration, reduce insulin resistance and reduce the inflammatory/stress response to surgery. Carbohydrate preparations are given to be taken as follows: 2 drinks on the evening before surgery and one further drink on the morning of surgery before 6am. Carbohydrate (CHO) drinks are rapidly emptied from the stomach and can be given up to 2 hours prior to surgery. The CHO preload drinks typically comprise 50g glucose (200Kcal) in 400ml water.

CHO preload drinks are NOT recommended for diabetic patients or for patients who have had previous gastric bypass surgery.

**Intra-operative Care**

The surgical principles of enhanced recovery are that minimal access surgery should be employed whenever possible. Laparoscopic techniques are encouraged, and where surgical incisions are made they should be as short as possible. The use of surgical drains and nasogastric tubes should be kept to a minimum.

With regard to anaesthesia, the aim is to provide excellent analgesia as well as promote early mobilization, early oral nutrition and reduced post operative nausea and vomiting.

**Analgesia**

Multimodal analgesic techniques are encouraged with the use of regular paracetamol and NSAIDs where appropriate. Beware of the use of NSAIDs in urology patients in view of potential reduction of renal function. These analgesics improve pain scores, reduce opiate requirements and reduce PONV.

Regional anaesthetic techniques are encouraged where possible in order to reduce the requirements for postoperative opiates and lessen the incidence of side effects.
Epidural analgesia at the mid-thoracic level is the gold standard technique for patients undergoing laparotomy with a large abdominal incision, or procedures such as open nephrectomy where a large loin or subcostal incision is planned.

Alternate regional analgesia techniques should be used whenever possible. These techniques include;

Rectus Sheath Block performed by surgeon - very effective for lower midline laparotomy incisions in gynaecological laparotomy patients

TAP (Transversus Abdominus Plain) block may be appropriate for some smaller abdominal surgical incisions.

Local anaesthetic infiltration into surgical wounds. It should be borne in mind that these techniques have a short (4-6 hour) duration of action unless a local anaesthetic infusion catheter is employed.

Patient Controlled Analgesia (PCA) remains a useful technique for patients in whom moderate or severe post operative pain is expected. PCA can be used as part of a multi-modal technique, or can be used in combination with local anaesthetic techniques.

PCA is often appropriate for patients undergoing laparoscopic procedures (laparoscopic nephrectomy) or those procedures resulting in a lower midline incision in combination with an LA technique (eg hysterectomy/open prostatectomy). PCA offers the advantage that opiates are titrated such that a lower total dose of opiate is administered to the patient. This should be balanced with the fact that PCA may limit the ability of the patient to mobilize postoperatively.

Intrathecal Morphine. A preparation of morphine for intrathecal injection has been introduced for use at Salford Royal. A one shot intrathecal injection of morphine (100-300 mcg) at the lumbar L3/4 level provides postoperative analgesia for approximately 24 hours after surgery, it is beneficial for patients who have small abdominal incisions (eg laparoscopic nephrectomy, nephroureterectomy, open prostatectomy), but is not advocated for patients undergoing major laparotomy. A postoperative HDU bed is mandatory because of the risk of delayed respiratory depression. See separate policy for details Intrathecal (preservative free) morphine: For the use of TWCG11(13) - Issue No: 1

Goal Directed Fluid Therapy

The principles of enhanced recovery IV fluid therapy protocols are to avoid hypovolaemia without overloading the patient with intravenous fluid. Excessive fluid therapy leads to water and sodium overload and has been associated with worse outcome and significantly increased length of stay in the surgical patient. The aim for the anaesthetist is to ensure there is adequate preload in order to optimize stroke volume, cardiac output and oxygen delivery but without overloading the patient with excess fluid and sodium.
Conservative (small) volumes of intravenous fluid replacement are thought to improve postoperative outcomes and reduce hospital stay. Intravenous fluid overload should be avoided.

Cardiac output monitoring during surgery is recommended as a guide to intravascular filling using indicators such as stroke volume and stroke volume variation.

Ideally a balanced crystalloid solution such as *plasmalyte*™ should be used perioperatively. Gelatin based colloids may be used with caution, and starch solutions should be avoided.

**Post Operative Nausea and Vomiting**

PONV is a major barrier to enhanced recovery in surgical patients. The anaesthetist should consider the following means of reducing PONV:

- Opiate sparing analgesia techniques
- TIVA
- Avoidance of nitrous oxide
- Avoidance of neostigmine
- Administration of prophylactic antiemetics
- Prescription of rescue anti-emetics
- Prescription of regular postoperative anti-emetic medication should be considered in high risk patients

**Normothermia**

Maintenance of normothermia (>36 degrees) reduces incidence of wound infection, reduces cardiac complications and reduces the likelihood of requirement for blood transfusion.

**Postoperative care**

**Mobility**

The aim is to mobilise patients 6 hours after surgery. If this is not realistic for a particular patient then mobilisation should occur on the 1st postoperative day. Delays in early mobilization are most commonly are due to post-operative hypotension, (often epidural related). Patients are expected to mobilise for 4 walks per day (aim to walk 60 metres) and to sit out in the chair for a total of 8 hours per day. Postoperatively the patient is reviewed by the physiotherapist and by the Enhanced Recovery Nurse Specialist. Patients are continuously reminded of nutritional and mobility goals and encouraged to achieve these targets.
Nutrition

Ideally patients should eat and drink when they feel able, and whatever they feel like. Currently most of our patients have free fluids (and ensure drinks) the evening after surgery and then have normal diet the following day. The aim is to discontinue IV fluids on the first postoperative day whenever possible. Patients are encouraged to take three ensures daily whilst in hospital to supplement their nutritional needs.

Thromboembolism prophylaxis

All patients should have VTE prophylaxis as per trust policy

Follow up

On discharge patients are given contact details for the Enhanced Recovery Specialist Nurse, as well as their Speciality Key worker. They are encouraged to call with any concerns / queries and are brought into clinic earlier if problems arise. Patients are followed-up via the telephone until they have no further issues and are reminded of points of contact should they be required.

Subsection headings

1. Introduction
2. Pre-op assessment
3. Admission and premedication
4. Carbohydrate loading
5. Intraoperative care
6. Analgesia
7. Goal directed fluid therapy
8. Post Operative nausea and vomiting
9. Postoperative care
10. Mobility
11. Nutrition
12. Thromboembolism prophylaxis
13. Follow up
This document is not a protocol of care, but a guideline for implementation of care by the perioperative team that will result in enhanced recovery from major surgery.

### Explanation of terms

- **CPEX**: Cardiopulmonary Exercise Testing
- **ERAS**: Enhanced Recovery After Surgery
- **IV**: Intravenous
- **LA**: Local Anaesthetic
- **LiDCO**: Lithium Dilution Cardiac Output
- **PONV**: Post Operative Nausea and Vomiting
- **SHDU**: Surgical High Dependency Unit
- **TIVA**: Total Intravenous Anaesthesia

### References and Supporting Documents

The following documents on the Trust website may be useful to readers of this guideline

- [Enhanced Recovery Programme for Urology and Gynaecology](pdf) [1.69MB]
- [Enhanced Recovery After Surgery (ERAS) Pathway](pdf) [881KB]
- [Prevention of Hospital Acquired Thrombosis (HAT)- Policy for the TC36(07)](pdf) [256KB]
- [TWCG11(13) - Issue No 1 - Intrathecal (preservative free) morphine For the use of](pdf) [328KB]