OFFICIAL

OBSTETRICS AND GYNAECOLOGY
CLINICAL PRACTICE GUIDELINE

Enhanced Recovery After Surgery (ERAS):

Major Laparoscopic Surgery Pathway for Gynaecologic Oncology Patients including those Eligible for Same Day Discharge

Scope (Staff):	WNHS Obstetrics and Gynaecology Directorate staff
Scope (Area):	Obstetrics and Gynaecology Directorate clinical areas at KEMH

This document should be read in conjunction with this Disclaimer

Contents

Purpose

This document describes the process for the Enhanced Recovery After Surgery (ERAS) care pathway aimed to standardise the perioperative care of patient's undergoing major laparoscopic surgery, including those eligible for same day discharge (SDD). This includes patients having laparoscopic surgery including but not limited to hysterectomy, salpingo-oophorectomy, lymph node biopsy/dissection, omentectomy, appendicectomy, peritonectomy, and adhesiolysis.

By standardising care, we reduce care variabilities and create a specific evidence-based care pathway which can improve patient outcomes, and improve patient engagement and satisfaction with their care.

Scope

This procedure applies to all parties involved in the care of Gynaecologic Oncology major laparoscopy patients including Anaesthetists, Anaesthetic technicians, Surgeons, Nursing, Pharmacy, Physiotherapy, Dietiticans, Hospital Administration, the patient and patients' support systems.

Procedure for ERAS

ERAS: Major laparoscopic surgery

ERAS is a multimodal perioperative care pathway designed to achieve early recovery for patients undergoing major surgery.

This document will focus on elements of the care pathway for the preadmission, pre-operative, intra-operative, and post-operative periods.

Pre-admission components

Patient selection

- There is no set criteria for same day discharge eligibility and patients will be assessed on a case by case basis by the surgical and anaesthetic team both pre-operatively in clinic and prior to discharge
- All major laparoscopic patients will be on the ERAS pathway regardless of whether SDD eligible or not
- Factors that may lead to admission include frailty/mFI ≥3 (calculated using the modified frailty index), age >80, DASI (MET <4), BMI >50, operative time >3 hours, comorbidities requiring in hospital follow-up care after surgery
- Patients must have a responsible adult to stay with them for the first 24 hours

Patient information, education and counselling

- The ERAS Clinical Nurse provides patient and/or care giver education ideally 2-4 weeks pre-operatively and again on the day/s prior to surgery. This will be via a phone or video conference call.
- This involves education on the principles of ERAS, surgical optimisation (e.g., smoking cessation/NRT, alcohol cessation, nutrition and exercise), and expectation setting around surgery, length of stay and recovery

- Mixed-type educational information will be provided in the form of verbal, written and visual information
- The ERAS nurse and physiotherapist will provide advice on
    - aCOUGH
        - **a**ctive **C**ycle of Breathing Techique (aCBT)
        - **O**ral hygiene
        - **U**nderstanding the concepts
        - **G**etting out of bed
        - **H**ead Elevation
    - Inspiratory muscles training (IMT) device use and education (if applicable)
    - Lymphodema education (if applicable)
    - Safe movement after surgery
- Patients will be seen by pharmacy in pre-admission clinic (PAC) particularly for those on multiple medications (≥5).
- Enoxaparin education and injection technique will be given pre-operatively in PAC and online in 'Surgery School'. Patient information leaflets on preventing and treating blood clots will also be provided.
- The following patient Information booklets will be provided
    - Gynaecologic Oncology Same Day Discharge ERAS
    - ERAS Gynaecologic Oncology
    - Major Gynaecologic Oncology Surgery: ERAS
    - Physiotherapy post-operative advice
- Online Surgery School access will be provided to all patients. These are available in English, Greek, Mandarin, Vietnamese, Cantonese, and Arabic. Patients will be given QR codes and URL to access these.

Theatre timing

- Timing of surgery is critical to successful same day discharge
- Same day discharge is most successfully achieved when cases are first or second on the list, and/or completed by early afternoon (2pm)
- Gynaecologic Oncology theatre lists will be ordered to facilitate this
- Optimise senior surgeon involvement in the case (to minimise surgical time)

Preoperative optimisation: alcohol, smoking, anaemia, diabetes, OSA, nutrition

- Patients will be screened for alcohol use and offered alcohol cessation interventions and counselling ideally at least 4 weeks pre-operatively.
- Counselling on the importance of the cessation of cigarette smoking and vaping and the provision of 4 week quit pack/NRT at least 4 weeks pre-operatively.

- Anaemia screening and optimisation (iron studies +/- Vit B12, folate). Referral for iron infusion if Hb <120 and meet criteria for absolute (ferritin <30, TSAT <20%) or functional iron deficiency (ferritin <150, TSAT <20%).
- All patient with risk factors for diabetes (see below) to have screening with HbA1C. Referral to physicians if HbA1C ≥6.5% (i.e. diagnostic of new diabetes)
    - >40 years of age
    - >18 years of age if Aboriginal or TSI
    - BMI >35
    - Random BGL >5.6 mmol/L
    - AUSDRISK score >6
- Patients with known diabetes to have HbA1C within the last 3 months. If poorly controlled with HbA1C ≥9% or highly variable blood glucose readings with frequent hypo or hyperglycaemia (requiring intervention or hospitalisation), referral to gynaecology physician for optimisation
- OSA screening with STOP-BANG score. Encourage CPAP use 4 weeks pre-operatively and post-operatively. Educate on importance of not lying flat day or night when apnoea risk greatest and avoiding opioids post-operatively if feasible.
- Nutritional screening and optimisation
    - Modified Malnutrition universal screening tool (MMUST) in clinic +/- subjective global assessment (SGA)
    - Referral to dietitian if indicated for
        - Nutritional and protein supplementation in cases of severe malnutrition
        - Oral immunonutrition e.g. Arginaid
        - Weight loss e.g. Optifast
    - Three(3) Online Surgery School Videos (external website) are available on ‘General Nutrition’, ‘Cancer Nutrition’ and ‘Nutrition and Surgical Optimisation for Patients with Obesity’

Pre-operative components

Chlorhexidine Pre-op body wash 4%

- Patients will be provided with chlorhexidine body wash and instructed to shower with this both the night prior to surgery and the morning of surgery.

Limit fasting interval

- Reduces aspiration risk while limiting thirst and starvation
- Solid food up to six (6) hours prior to surgery
- Clear fluids until two (2) hours prior to surgery

- ‘Sip to send’ 50ml/hr allowed
- Patients taking GLP1 agonists/co-agonists will be given written patient information from ANZCA in pre admission clinic (PAC) on ‘Preparing for your medical procedure when taking some diabetes and/or weight loss medications’. They will be instructed the day before surgery (24 hours pre-operatively), to have clear fluids only then sips of water the day of procedure depending on their surgery time.

Carbohydrate loading

- CHO drink Nutricia preOp 25 g x 6 will be provided to the patient
  - On the day prior, patient will be instructed to drink 2 bottles (400 ml total) at 4pm and 8pm
  - On the day of surgery, patient will be instructed to drink 2 bottles (400 ml total) between 5-6am
- This is safe in most patients including well controlled type 2 diabetics
- Avoid if type 1 diabetes, poorly controlled type 2 diabetes on multiple medications, on dialysis, renal impairment (CKD>3, eGFR<60)
- Caution if bariatric surgery within last 2-3 years or on GLP-1 inhibitors
- Patients on GLP-1 agonist with good BSL control, can have Nutricia or Medidrink at 4pm and 8pm the day prior to surgery, but omit day of surgery
- A smaller volume CHO drink, Medidrink 50g/200ml is available to patients if clinician concerns re: delayed gastric emptying or unable to tolerate larger volumes (e.g. the elderly).

Pre-operative analgesia

- Patients to be given oral paracetamol 1 g (regardless of weight) and celecoxib (200 mg, or 100 mg if >65 years of age or renal impairment CrCl <30 mL/minute) on arrival in DSU as long as no contraindications such hypersensitivity, active peptic ulcer, asthma with bronchospasm
- Avoid anxiolytics (such as lorazepam) unless severe pre-op anxiety

Thromboprophylaxis prevention

- Well fitting TEDS in DSU

Maintain normothermia

- Active warming with either a warmed linen blanket or space blanket in DSU prior to theatre even if normothermic on arrival to DSU.

Observations

- As usual DSU requirements on arrival – temperature, blood pressure (BP), heart rate (HR), respiratory rate (RR), oxygen satuaration, weight, BSL (if indicated)

Intra-operative components

- **Thromboprophylaxis prevention**
  - Chemoprophylaxis with Heparin 5000 units subcutaneous injection immediately after induction
  - Mechanical prophylaxis with TEDS and Flotrons/sequential compression devices in theatre
- **Maintain normothermia**
  - Prevent heat loss after induction and at the end of case (avoid leaving patient exposed while scrubbing for example and consider heated blankets)
  - Theatre temperature at least 21 degrees
  - Active warming – aim patient temperature >36 degrees throughout case
    - Temperature monitoring - record 1 hourly
    - Forced air warming and full body surgical access bear hugger
    - Consider heated mat – Hot Dog/Waffle Grip
    - Consider warmed IVFs
    - Warmed fluids for intraoperative wash
- **Intravenous fluids**
  - Aim euvolemia as long as no major fluid shifts or blood losses
  - Consider <5ml/kg/hour crystalloid solution (1-2L total for case)
  - Cap IVFs at end of case or on departure from recovery
  - IVC to stay in until tolerating fluids and no PONV
- **Initiate multimodal analgesia**
  - Total intravenous anaesthesia (TIVA)
  - Consider the following
    - Consider NSAID if not given pre-operatively
      - Caution with all NSAIDs in patients on multiple antihypertensives and the elderly, renal impairment
    - IV ketamine
      - 0.25 mg/kg bolus then 0.1-0.2 mg/kg/hour
    - IV magnesium
      - Option of bolus only (50 mg/kg) or bolus and infusion (30-50 mg/kg followed by 10-15 mg/kg/hr till the end of surgery) dose mg/kg/hour
    - IV opioid

        - If given, preference for short acting and limit dose
    - IV lidocaine
        - 1.5 mg/kg then 1-1.5 mg/kg/hr
    - Avoid benzodiazepines
    - Consideration of TAP blocks (surgeon placed or ultrasound guided) if mini laparotomy for specimen retrieval

- **Postoperative nausea and vomiting (PONV) prophylaxis and treatment**
    - Calculate Apfel score to predict risk of PONV
    - Consider TIVA (form of antiemetic prophylaxis)
    - If 1-2 risk factors (20-30% risk of PONV), give at least two (2) prophylactic IV antiemetics with different mechanisms of action
        - Examples
            - Glucocorticoid (e.g dexamethasone 8 mg IV before skin incision, 4 mg if age >80 or <50kg) Do not give to type 1 diabetics
            - 5HT antagonist (e.g ondansetron 4 mg IV before skin closure or granisetron 1 mg IV)
    - If ≥3 risk factors (>50% risk of PONV), consider addition of another antiemetic e.g. D2 receptor antagonist (e.g metoclopramide 10 mg IV)
- **Lung protective ventilation strategies**
    - Aim for low tidal volumes 6-8mL/kg of predicted body weight
    - Optimise PEEP to minimise driving pressure (4-6cm H20)
    - Alveoli recruitment manoeuvres
- **Optimise anaesthetic depth – aim for BIS/entropy 40-55**
- **Documented reversal of neuromuscular block to a train-of-four ratio of 90% occurred prior to extubation**
- **Surgical Site Infection (SSI) reduction**
    - Antibiotics
        - Cephazolin IV 2g or 3g if ≥120kg 30-60 minutes prior to skin incision (in order to obtain the highest drug serum levels at incision), but can be given 10-25 minutes before incision.
        - Redosing of cephazolin at 4 hours if required or blood loss >1500ml
        - Metronidazole IV 500 mg if hysterectomy and/or appendicectomy
        - SSI are higher when ß-lactam alternatives are used. Restrict use to those with history of IgE-mediated penicillin hypersensitivity reaction, including urticaria (not just rash), angioedema and anaphylaxis. Clindamycin 600 mg IV if allergy to cephalosporins

- Skin preparation
  - Chlorhexidine-alcohol skin preparation to skin
  - Povidone-iodine or cetrimide for vaginal preparation
  - Wait for skin preparation to dry before draping
- BSL management
  - Measure BSL hourly in diabetics
  - Maintain blood glucose within 5-10mmol/L in patients with diabetes
  - Follow ADS-ANZCA peri-operative diabetes and hyperglycaemia guidelines
  - Consider treating hyperglycaemia when BSL >10mmol
  - For T2DM and other types of diabetes
    - Subcutaneous rapid-acting insulin for BSL >12mmol/L with dosing determined by patient's body weight
      - If >100kg, give 6 units every 3 hours until BSL <10mmol/L
      - If 55-100kg, give 4 units every 3 hours until BSL <10mmol/L
      - If <55kg, give 2 units every 4 hours until BSL <10mmol/L
    - Variable rate insulin infusion if BSL>15mmol/L or rapidly rising. Perform blood gas and fingerstick ketones to check for ketoacidosis.
- Prevention of hypothermia (as above)

- **Urinary catheter**
  - IDC at start of procedure
  - Remove IDC at end of procedure
  - If cystoscopy done, consider emptying bladder with cystoscope to avoid repeat instrumentation of bladder

Surgical techniques

- OGT ok for palmers point entry to reduce risk of gastric perforation but to be removed at extubation
- Consider Local anaesthetic to port sites
- Port size (5mm vs 10mm) and pneumoperitoneum pressures (usually 12-15mmHg) up to discretion of surgeon. Lower pressures better but not at compromise of surgical field visualisation
- Consider positive pressure ventilations (Valsalva) prior to fascial closure to reduce residual pneumoperitoneum and reduce post-op pain. Will also help recruit collapsed alveoli due to pneumoperitoneum and Trendelenburg
- Avoid surgical drains

Post-operative components

Recovery / Post Anaesthetic Care Unit (PACU)

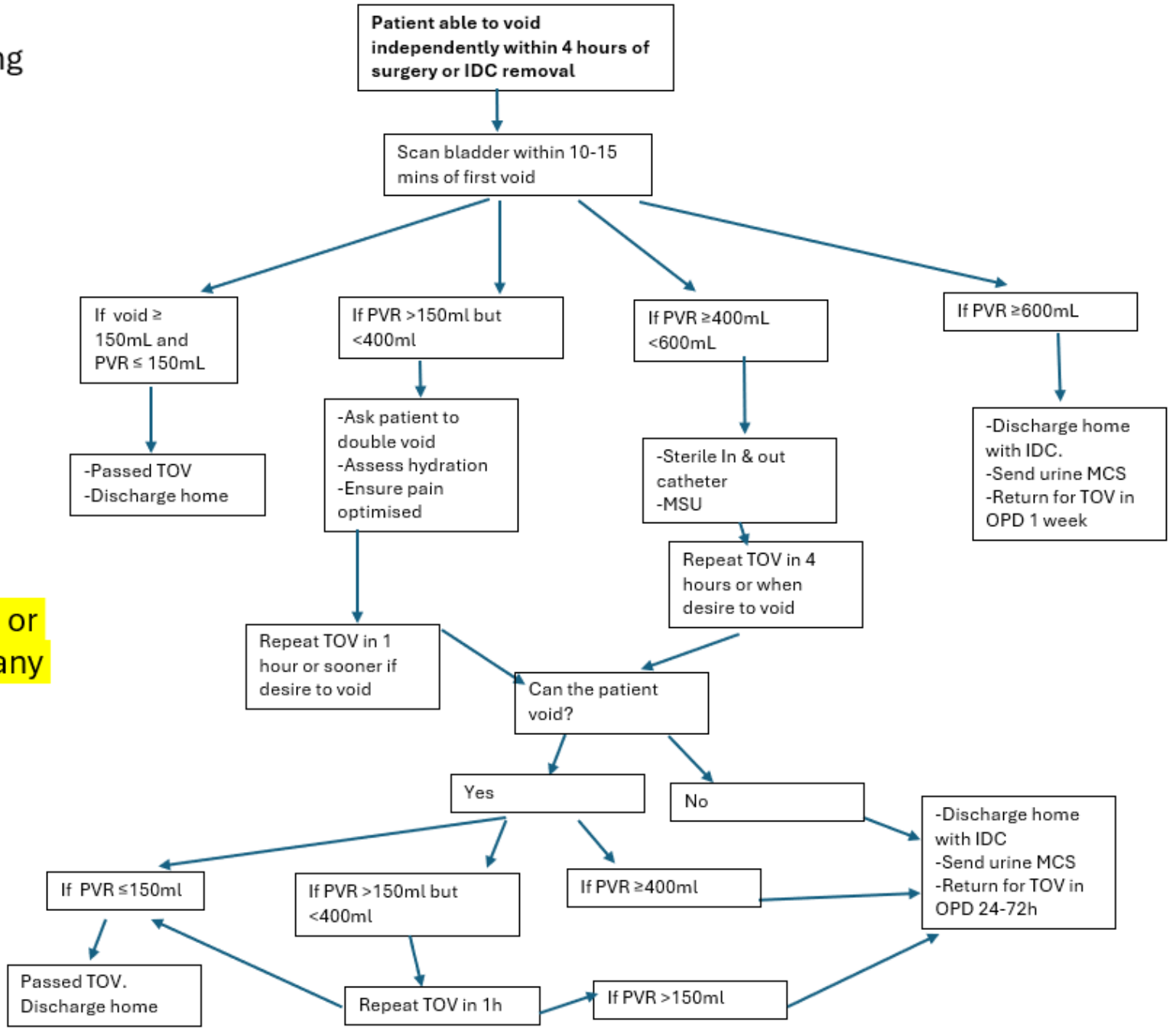
- Blanket or space blanket for warming
- Aim temp ≥36 degrees
- aCOUGH
- Pain protocol
  - Fentanyl IV PACU protocol
  - Tramadol 50 mg IV 2 hourly (maximum of 400 mg in 24 hours)
  - Buprenorphine 200 microg sublingual 2 hourly (maximum of 1600 microg in 24 hours)
  - Tapentadol IR 50 mg every 4 to 6 hourly (if tramadol contraindicated or unable to take due to sensitivity under the direction of a Pain Service or Anaesthetist only (Formulary One, external website))
- Antiemetics (as per PONV chart) MR810.02
  - 1st line - Ondansetron 4 mg 6 hourly PO/IV prn (maximum of 20 mg in 24 hours)
  - 2nd line - Metoclopramide 10 mg 8 hourly IV/IM (maximum of 30 mg in 24 hours)
  - 3rd line - Droperidol 500 microg IV
  - 4th line- Cyclizine 25-50 mg IV
- Cease IVFs
- Transfer to ward when ready

Recovery on ward

- Normal diet and oral fluids offered within 1 hour
- Remove IVC once tolerating diet
- aCOUGH
- Oral analgesia for pain
  - Tramadol 50-100 mg every 4 hours (maximum of 400 mg in 24 hours),
  - Buprenorphine 200-400 microg every 4 hours (maximum of 1600 microg in 24 hours)
  - Alternative is Oxycodone 5-10 mg every 4 hours (maximum of 30 mg in 24 hours)
- Antiemetics if required (follow PONV chart)
- Check minimal vaginal bleeding
- Mobilise within 2 hours, initially with assistance, progressing to minimal to no assistance
- See Bladder Algorithms for Gynaecology Oncology Patients (in this document)
  - Initiate trial of void when has urge to void or approximately 4 hours post-op
- Observations within range as per Adult Observation and Response Chart (MR258.02) – Temperature ≤37.9C, heart rate (HR) <100, systolic blood pressure (SBP) <160 or >110, respiratory rate ≥10 and <21, oxygen saturation ≥94% in room air (RA)

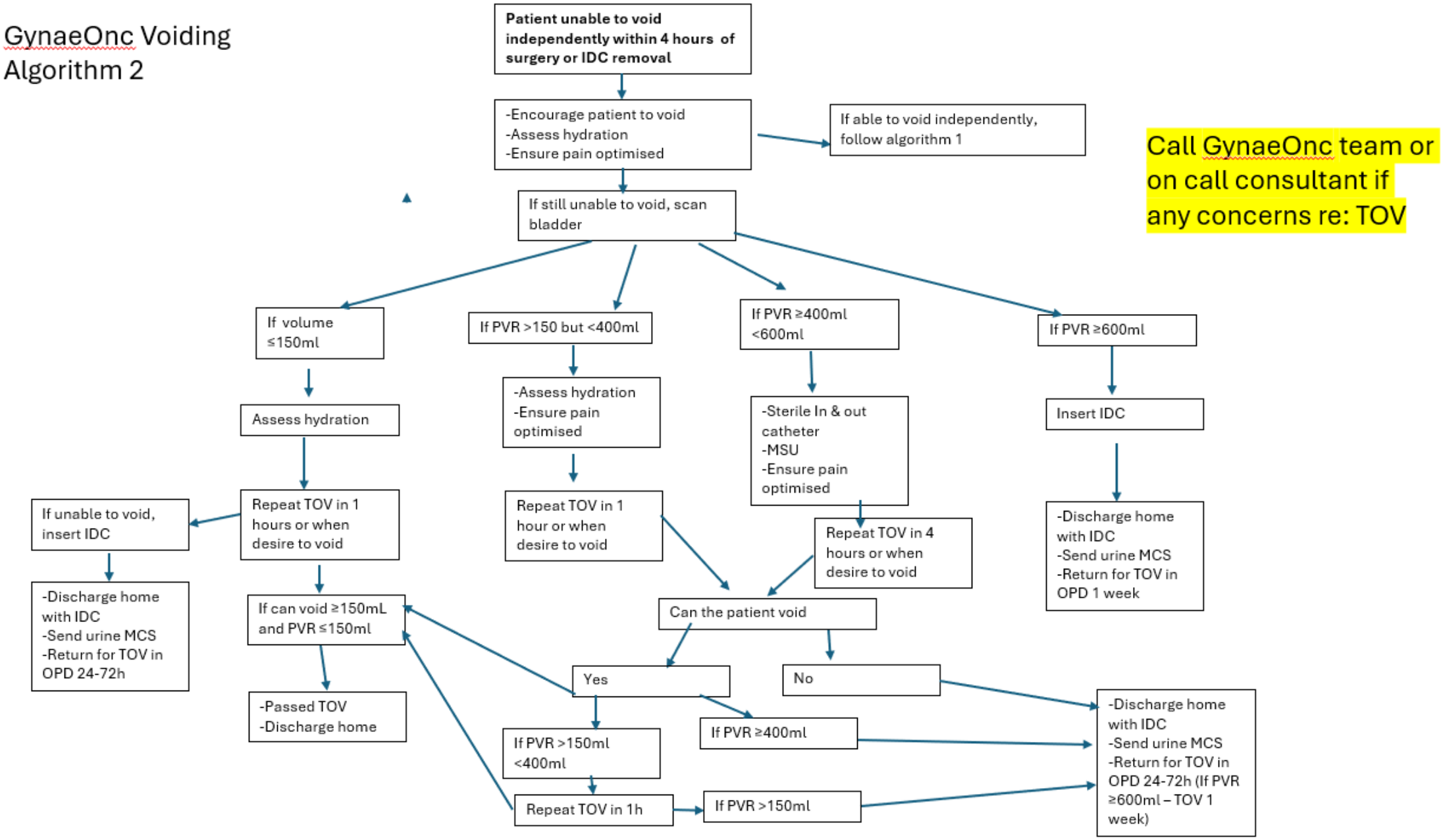
Bladder algorithm 1: Able to void

GynaeOnc Voiding Algorithm 1



Call GynaeOnc team or on call consultant if any concerns re: TOV

Bladder algorithm 2: Unable to void



Discharge

Criteria led discharge

- Observed in hospital for a minimum of 4 hours
- Pain is controlled
- Eating and drinking
- Able to void (1 void of >150ml with <150ml PVR)
- Can move on their own
- Observations within range as per Adult Observation and Response Chart (MR258.02) – Temperature ≤37.9C, heart rate (HR) <100, systolic blood pressure (SBP) <160 or >110, respiratory rate ≥10 and <21, oxygen saturation ≥94% in room air (RA)
- Has a responsible adult to pick them up and stay with them overnight

If patients experience any complications during their surgery or anaesthetic, or do not meet the discharge criteria, they may be admitted to the hospital overnight until it is safe for them to be discharged.

Discharge orders

- Prescribe on hospital prescription
    - Paracetamol 1 g PO every 6 hours (maximum dose 4 g in 24 hours) for 7 days [50 tablets]
    - Non-steroidal anti-inflammatory for 5 days: Ibuprofen 400 mg PO every 8 hours [12 tablets] OR Celecoxib 100 mg PO every 12 hours [10 capsules]
    - Stronger pain relief when required (PRN)
        - Tramadol 50-100 mg every 6 hours PRN (maximum dose 400 mg in 24 hours) [10 capsules] OR
        - Buprenorphine sublingual tablet 200 microg every 4 hours (maximum dose 1200 microg in 24 hours) [10 sublingual tablet] *Schedule 8 prescribe on a separate prescription

          OR
        - Tapentadol IR 50 mg every 4 to 6 hours (if tramadol contraindicated or unable to take due to sensitivity under the direction of a Pain Service or Anaesthetist only (Formulary One, external website)) [10 tablets] *Schedule 8 prescribe on a separate prescription
    - WNHS 'Your Pain Relief at Home' leaflet
- Constipation management
    - Macrogol 1 sachet bd for 7 days [10 sachets] AND
    - Docusate 120 mg bd for 7 days [20 tablets]
    - WNHS 'Medicines to Manage Constipation' leaflet

- Antiemetic - Ondansetron 4 mg every 6 hours PRN [4 wafers]
- Thromboprophylaxis management:
  - TEDS until mobilising to normal levels
  - Enoxaparin 40 mg s/c daily for 28 days fo all cancer patients (to start 8 hours post intra-operative injection). No enoxaparin or shorter duration guided by Caprini VTE score.
  - Consumer leaflet on 'Preventing and Treating Blood Clots'
  - NMHS: KEMH Gynae Oncology- English: Online Surgery School Video (external website) on enoxaparin administration and safe needle disposal (see 'Clexane Pre-Filled Syringe with Safety Lock' and other relevant videos)
  - See also WNHS VTE guideline
- Discharge summary by RMO
- Major Gynaecologic Oncology Surgery ERAS booklet given (if not already given). See KEMH website Patient Fact Sheets
- Wound Care Leaflet

Follow-up

- Telehealth appointment with ERAS nurse 24-72 hours post-operatively
- Australian Hospital Patient Experience Question Set to be completed after discharge (via email)
- Myles QoR-15 Patient Surbey completed first 24 hours post -operatively (via email)
- ERAS nurse mobile given for any concerns within hours.
- Advised to attend local Emergency Department or KEMH Emergency Centre for any after hours concerns/emergencies.
- Phone call from Tumour Conference Clinical Nurse Consultant with pathology results and follow-up plan 2 weeks post-operatively
- Telehealth nurse appointment 30 days post-operatively
- PROMIS 30 days post-op questionnaire (via email)
- GP for post-operatively wound check at 6 weeks

Clinical documentation

Clinical documentation will be in the patients Digital Medical Record (DMR) and must be accurate, timely and reflect the entirety of patient care provided. The Redcap ERAS data base will be used for the purpose of compliance and audit with the four components (preadmission, pre-operative, intra-operative and post-operative) of the ERAS pathway, as well as auditing the patient experience and outcomes.

References and resources

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Related WNHS policies, guidelines and procedures

WNHS VTE guideline

Useful resources and related forms

Patient Information brochures/booklets- see titles within guideline

Forms

- Formulary One (external website)

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NSQHS Standards (v2) applicable:	☒ 1: Clinical Governance ☐ 2: Partnering with Consumers ☐ 3: Preventing and Controlling Healthcare Associated Infection ☒ 4: Medication Safety	☒ 5: Comprehensive Care ☐ 6: Communicating for Safety ☐ 7: Blood Management ☐ 8: Recognising and Responding to Acute Deterioration
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Version history

Version number	Date	Summary
1	Aug 2025	First version

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