SESLHD GUIDELINE COVER SHEET

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KEY TERMS	Advanced Recovery Orthopaedic Program (AROP)
SUMMARY	The purpose of this guideline is to provide procedural anaesthetists with recommendations for anaesthetic management of patients undergoing lower limb arthroplasty under the AROP clinical pathway.

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Section 1 - Background

The Advanced Recovery Orthopaedic Program (AROP) is a concept and model of care that aims to provide patients with the safest, most effective and efficient treatment available for lower limb arthroplasty.

International data demonstrates that for patients who meet specified clinical criteria, the model of enhanced recovery reduces morbidity, mortality, and convalescence (Raphael et al. 2011, ACI 2015, Soffin and Ya Deau 2016).

Through the implementation of optimised and evidence-based multidisciplinary clinical collaboration (including multimodal, opioid-sparing analgesic methods and early and intensive mobilization) patients experience improved outcomes, reduced lengths of stay, enhanced multidisciplinary collaboration and improved surgical waitlist times (Soffin and Ya Deau 2016).

In conjunction with specialised surgical techniques, specialised anaesthetic techniques and interventions have been shown to contribute significantly to the enhanced recovery process through opioid sparing, multimodal analgesic regimes. This guideline provides anaesthetists with recommendations for the provision of anaesthetic techniques to support the principles of AROP.

This is a guideline only. Considerations and alterations in anaesthetic treatment and technique must be considered on an individual patient basis. Patients should be assessed for allergies, past medical history and contraindications that may prevent the use of the recommended drugs in the guideline.

Section 2 - Principles

Patients undergoing lower limb arthroplasty under the AROP model of care should meet the specified clinical criteria prior to being eligible for this pathway:

- Primary hip or knee replacement
- Independently mobile
- No significant cardiac or respiratory functional limitations (clinical judgment)
- Not a current chronic pain patient
- Pre-operative Hb assessment within normal limits
- Lives within the catchment area negotiated with PACS (POW)/South Care (TSH)
- Suitable home and adequate support person at home on discharge for the first 24 hours

However, patients are eligible for the AROP model of care by the discretion of the AROP surgical, anaesthetic, nursing, physiotherapy and occupational therapy teams.

The anaesthetic techniques outlined in section six (6) support the principles of the AROP clinical pathway including opioid sparing, multimodal pain management, early mobilisation and discharge from hospital within 24 to 48 hours. This guideline complements the multidisciplinary use of:

- SESLHD AROP Elective Lower Limb Arthroplasty Clinical Pathways (Hip and Knee)
- SESLHD Risk Assessment and Prediction Tool (RAPT) Form

Section 3 - Definitions

ARB	Angiotensin II Receptor Blockers
ACE	Angiotensin- converting enzymes
AROP	Advanced Recovery Orthopaedic Program
ASA	American Society of Anaesthesiologists
Hb	Haemoglobin
eMEDs	Electronic Medication Management platform (within the electronic medical record (eMR)
IT	Intrathecal (spinal)
PNB	Peripheral Nerve Block
LIA	Local Infiltration Anaesthesia
NSAID	Non-steroidal anti-inflammatory drug
PONV	Postoperative nausea and vomiting
PACS	Post-acute care services
IDC	Indwelling catheter

Section 4 - Responsibilities

Procedural anaesthetists are responsible for:

- Patient assessment, and implementation of the guideline (where appropriate).
- Documentation of preoperative, intraoperative and postoperative medications (Anaesthetic Record and approved medication record (eMeds)).

Surgeons are responsible for:

- The selection of patients suitable to undertake the AROP model of care
- Consultation with procedural anaesthetist to ensure the appropriate surgical and anaesthetic management of AROP patients

Nursing staff are responsible for:

- Implementation of the preoperative and postoperative plan (as documented by anaesthetist) and the AROP Elective Lower Limb Arthroplasty Clinical Pathways.
- Documentation of the administration of preoperative and postoperative medications in the anaesthetic record (premedication section), eMEDs platforms.

Section 5 - Documentation

It is the responsibility of the anaesthetist to document medications in the appropriate clinical record:

- All ***preoperative*** medications should be documented on the anaesthetic record (premedication section), the eMeds platform as guided by local hospital procedures.
- All ***intraoperative*** medications should be documented on an approved anaesthetic record (SES090010 Anaesthetic Record; SES090011 Anaesthetic Record – Continuation; NHSIS1576 Anaesthetic & Recovery Record).
- All ***postoperative*** medications should be documented on the eMEDs platform.

Section 6 - Guideline

Preoperative

- Patient/Carer/Family education & engagement
- Nutrition: Carbohydrate loading
- Minimal perioperative fasting (6/2 rule):
- **Solids**: 6 hours
  Clear Fluids: 2 hours
- Optimisation: anaemia
- Optimisation: glycaemic control (refer to local clinical business rules)
- Pre-emptive oral analgesia

Intraoperative

- Locoregional anaesthesia (Spinal, PNB, LIA)
- Short-acting sedative-hypnotic agents
- Goal: normothermia
- Goal: normovolemia
- Blood conservation
- Antibiotic prophylaxis

Postoperative

- Multimodal, opioid-sparing analgesia: NSAIDs, paracetamol
- PONV prophylaxis
- Early mobilisation
- Early oral intake

Adapted from: Soffin EM & YaDeau JT (2016). *Enhanced recovery after surgery for primary hip and knee arthroplasty: a review of the evidence.* British Journal of Anaesthesia, 117 (S3) (iii62-iii72).

Section 7 - References

Agency for Clinical Innovation (2015). Enhanced Recovery After Surgery.

Raphael M, Jaeger M and van Vylymen J (2011). *Easily adoptable total joint arthroplasty program allows discharge home in two days.* Canadian Journal of Anesthesiology. 58 (902-910).

Soffin EM and YaDeau JT (2016). *Enhanced recovery after surgery for primary hip and knee arthroplasty: a review of the evidence.* British Journal of Anaesthesia, 117 (S3) (iii62-iii72).

Section 8 - Revision History

Date	Revision no:	Author and approval
August 2017	Draft	Application to Develop
August 2017	Draft	Draft for Comment
December 2017	Draft	Formatting reviewed by Executive Services
February 2018	Draft	Approved by Drug and Quality Use of Medicines Committee
February 2018	Draft	Approved by Clinical and Quality Council

Appendix 1

Example:

Anaesthetic Guideline for Enhanced Recovery Lower Limb Arthoplasty

Doses apply to patient's with normal renal function. Consider reduced doses in patients with renal impairment.

Perioperative Unit 1-2 hours (*preoperatively*):

- Carbohydrate loading drink (up to 2 hours pre-op)
- Paracetamol (1g PO STAT)
- Long acting NSAID (e.g. PO Meloxicam 15- 30mg STAT)

Anaesthetic Bay:

- Morphine (up to 150 microg intrathecal)
- +\- Adductor canal block (TKR) (Up to 0.5mg/kg ropivacaine)
- IDC
- Antibiotic Prophylaxis: 2g Cephazolin IV STAT (+Vancomycin 15mg/kg IV STAT for patients colonised with MRSA).
- Dexamethasone (4mg IV STAT)
- Tranexamic Acid (15 mg/kg IV STAT)

Intraoperative Surgical Infiltration (TKR):

- 0.2% Ropivacaine (max 2.5 mg/kg –total)
    - ***Caution: avoid LA toxicity, consider anaesthetic infiltration.***
- Ketorolac 30mg
- Adrenaline (1x 1:1000 amp)
- Clonidine (150 microg)

Postoperatively:

- **No PCA**
- Tranexamic acid (15 mg/kg IV, 8 and 16 hours postoperatively)
- Dexamethasone (4mg PO STAT)
- Sustained release opioid (e.g. Oxycontin 10mg PO BD)
    - Beginning from 24 hours post intrathecal morphine
- Paracetamol (1g QID PO)
- Long acting NSAID (e.g. Meloxicam 15-30mg PO)
    - Adjust for renal function, not if on ACE/ARB
- Short acting opioid (e.g. oxycodone 5-10mg PO PRN)
- Antiemetic (e.g. metoclopramide 10mg IV PRN)
- DVT Prophylaxis (according to SESLHD Surgical VTE Prophylaxis Recommended Prescribing Guideline)

NB: Medication charting responsibilities to be negotiated between surgical and anaesthetic teams.