9074 11/21

BAY OF PLENTY DISTRICT HEALTH BOARD HAUORA A TOI

2021 BOPDHB ERAS ORTHOPAEDIC CLINICAL PATHWAY

SURGICAL, ANAESTHETIC, NURSING AND ALLIED HEALTH TEAM CLINICAL PATHWAY

FOR FRACTURED NECK OF FEMUR

Tauranga site specific edition

Scope:

This clinical pathway outlines the standard care for patients sustaining an acute Neck Of Femur (NOF) fracture.

Deviations:

Clinical Pathway deviations are authorised by the patient's surgeon, anaesthetist or geriatrician, and documented in the operations record or clinical notes.

Pathway Inclusion Criteria:

- Patients who sustain a fractured neck of femur.
- Clinically stable regarding other injuries and comorbidities.

Pathway Exclusion Criteria:

- Any non-orthopaedic condition requiring ongoing assessment and management in ED setting.
- Pathological fracture.
- Multiple injuries.

Contents

KEY GOALS FOR PATIENTS SUSTAINING A FRACTURED NECK OF FEMUR

- Rapid ED throughput - within 4 hours.
- Early input from orthopaedics – within 4 hours.
- Early input from anaesthetics – #NOF patients to be preassessed by anaesthesia within 8hours of booking.

  – BUT ortho team may request ASAP assessment for patients anticipated to be suitable for GO pathway (to allow same day access when possible).
- Early input from orthogeriatric (or delegated) service – within 24 hours.
- Rapid optimisation of patient co-morbidities using a documented plan.
- Prompt surgery – within 31 hours.
- Patients should be prioritised on the acute lists (0800 – 1800)
- Early mobilisation following surgery.
- Early and consistent use of an expected day of discharge (EDD).
- Robust multidisciplinary clinical pathway starting in ED.
- Multidisciplinary team input post-operatively for optimal patient rehabilitation.
- Clear transfer and discharge criteria.
- Robust set of pathway performance measures.

EMERGENCY DEPARTMENT

Medical

- Review of X-ray by ED Doctor to confirm diagnosis.
- Assess and make decision regarding clinical stability, co-morbidities and other injuries sustained.
- Referral to Orthopaedic registrar on-call for acceptance to service.
- Inform Orthopaedic house surgeon on-call for impending admission of patient to ward and need to be clerked.
- Nil By Mouth once diagnosis confirmed until reviewed by Orthopaedic Registrar.
- Deliver ultrasound-guided fascia iliaca nerve block or femoral nerve block by trained personnel.
- Place a urinary catheter for all patients – preferably in ED but may be done on ward.
- Document allergies.
- Unless specific allergies, following medications are to be considered and prescribed as appropriate:
    - IV Paracetamol 1g QID (or dose adjusted if underweight (see below for details)
    - IV Morphine/fentanyl as per protocol
    - IV Antiemetic PRN
    - IV Fluids
- Oxygen - Preferably nasal, target sats ≥93%, 88-92% risk of hypercapnic respiratory failure.
- Adjust dose of IV paracetamol if weight <50kg, malnutrition, liver disease, alcoholic, enzyme inducing drugs (Dose to be given if <50kg is 15mg/kg/dose).
- Do not chart NSAIDs.
- ACC paperwork completed (ACC45).

Radiology

- Aim for hip X-ray (AP/Lateral) with sizing ball and chest X-ray within 30 minutes of referral.
- If x-ray inconclusive, consider MRI (or CT if contraindicated) following consultation with Orthopaedic team.

Nursing – ED

- Transfer directly onto X-ray trolley.
- Commence ERAS neck of femur pathway.
- Document time of arrival.
- Order X-ray and mark as Urgent (Chest, AP pelvis and Lateral hip with sizing ball).
- Ensure patient is undressed for X-ray and full physical assessment completed.
- Record vital signs, including weight (if known), neurovascular observations and pain score on presentation, within 30 minutes of administration of initial analgesia and then hourly until settled on ward.
- Assess for pain using Pain Assessment Tool – note in adults with advanced dementia use PAINAD scale.
- Contact duty manager to book bed. Ward 4B is the preferred ward.
- Confirm ongoing NBM status.
- Perform an Electrocardiogram (ECG) for all patients.
- Insert a large-bore (if possible) IV cannulae.
- Ensure drug and fluid balance chart are completed.
- Commence analgesia, oxygen and fluids as charted.
- Place a urinary catheter for all patients – preferably in ED but may be done on ward.
- Warm blankets or bear hugger if temp <35.5 ˚C.
- Consider screening for Multi-drug resistant organisms (ESBL,MRSA,CPE,VRE)

- The following blood samples must be taken:

All	Bottle Top
• Full blood count	1x Purple
• Urea, electrolytes, Calcium, LFTs, B12 & Folate	1x Green
• Group & hold	1x Pink
• Coagulation studies (if on anticoagulant therapy)	1x Blue

- Ensure relatives informed of admission and check EPOA status.
- Record time of decision to admit to the ward.
- Discuss and arrange handover to Ward, using ERAS pathway.
- Record last set of observations on EWS chart prior to transfer to the ward.
- Record time to transferred to ward/theatre (aim < 4 hours), and if needed reason for delay.

Clerical

- Admit electronically.
- Check Patient details form correct and updated.
- Register ACC form.
- Obtain copy of EPOA (if applicable).
- Ensure correct contact details of relatives/next of kin/carer.

FAST TRACK NOF PATHWAY FOR ED

The patient can be transferred to the ward prior to orthopaedic registrar review if the following criteria are met:

1. The patient is medically stable for transfer
2. Simple mechanical fall with no concerning features requiring further investigation
3. NOF has been confirmed on x-ray
4. The patient has had a fascia iliaca / femoral nerve block sited
5. There is a medication chart with IVF, oral and IV pain relief and antiemetic charted
6. The on call orthopaedic reg has been contacted and is aware of the admission
7. ED has reviewed appropriate investigations within the department

Neck of Femur Pathway Checklist

COMPLETED BY ED NURSING STAFF:

Tick:

- ☐ IV Line inserted
- ☐ Obtain bloods
- ☐ (CBC/U+E/Coag/G&H/LFT/B12/Folate
- ☐ ECG completed
- ☐ Administered oral analgesia
- ☐ Titrate IV morphine/ analgesia to pain
- ☐ Instruct patient to be NBM until Ortho review
- ☐ Start IV fluids
- ☐ Provide shift leader with admission details form
- ☐ MSU sample

Once NOF is confirmed consider IDUC- If not done in ED handover to ward staff

COMPLETION BY ED SHIFT LEADER:

- ☐ Page Admitting ward Shift leader with fast tract details and organise transfer
- ☐ Notify ED primary nurse of agreed transfer time
- ☐ Power page Duty Manager of details of patient being fast tracked

COMPLETED BY ED MEDICAL STAFF:

- ☐ Complete primary survey
- ☐ Ensure no other injuries required to be treated in ED
- ☐ Order x-rays of the hip

*AP pelvis *True lateral hip *CXR

- ☐ Prescribe IV and oral analgesia +/- antiemetic
- ☐ Prescribe IVF for NBM status
- ☐ If X-ray confirms NOF phone Orthopaedic Reg on call
- ☐ Administer block

Fascia Iliaca block *Femoral nerve block*

Time:

- ☐ Ensure ECG and bloods have been reviewed prior to admission

ACUTE WARD (PRE-OPERATIVE)

Orthopaedics - House Officer

- Admit patient within 2hr of admission to admitting ward.
- Review blood results, ECG and chest x-rays.
- If review identifies unstable medical condition(s),request medical / Geriatric team review.
- Consider single unit pre-operative transfusion of Red Blood cells (RBC) if Hb < 80 g/l or Hb <90g/l with a history of ischaemic heart disease.
- Ensure all patients have a valid group and hold (G&H). If antibodies are present discuss the need for cross-match with blood bank and inform the anaesthetist.
- Chart patient's own regular medications after completion of medication reconciliation form.
- Withhold medications as appropriate (e.g. anticoagulants, metformin, ace inhibitors). (See guidance for anticoagulation management below).
- Check patient has IDC in-situ.

Anticoagulation

Warfarin

- Establish indication for warfarin therapy.
  Where the indication is atrial fibrillation ONLY (with no recent history of TIA or stroke) then warfarin reversal should occur prior to the patient going to theatre. Target INR < 1.5 for surgery. (If the patient has had a recent TIA or CVA then the surgical team to discuss the case with a stroke physician or haematologist)
- Where the patient has a moderate - high risk indication for warfarin,(see criteria in box below) case by case discussion should occur with the relevant physician (e.g. cardiologist, stroke physician or haematologist). Where bridging is required this will most likely be with an infusion of unfractionated heparin (see protocol).

Warfarin reversal for patients when the ONLY indication for warfarin is atrial fibrillation

- Give first dose of IV Vitamin K in ED, dose to be based on INR

INR	IV Vit K dose
1.5-2.0	2mg
2..1-3.0	3mg
3.1-4.0	4mg
>4.0*	5mg

*Consider discussion with a haematologist if INR >4.0

- If the patient has the first dose of Vit K in the morning (prior to 12pm), then the INR should be repeated that evening (minimum 6hours after Vit K).
  - If INR < 1.5, plan for surgery the next morning prioritised on the trauma list.
  - If INR > 1.5 after initial dose of Vitamin K, give further Vitamin K and repeat the INR the following morning at 6am. If repeat INR <1.5 proceed to theatre prioritised on the trauma list.
- Patients who receive their first dose of Vit K after 12pm (noon) should have their INR repeated the following morning at 6am.
  - If INR <1.5 proceed to theatre prioritised on the trauma list.
  - If INR > 1.5 after initial dose of Vitamin K give further Vitamin K and repeat INR that afternoon (minimum 6 hours after Vit K).
  - If repeat INR < 1.5 plan for theatre the next morning, prioritised on the trauma list.
- If the INR is not <1.5 after 2 doses of Vitamin K contact haematologist for advice.

Moderate & High PerioperativeThomboembolic Risk - Management of these cases to be discussed on a case by case basis with haematologist or cardiologist as appropriate. These patients require an individualised plan.

Mechanical Heart Valve – High Risk

- Any mitral, tricuspid or pulmonary valve prosthesis.
- Any caged-ball or tilting disc aortic valve prosthesis.
- Any prosthetic valve plus CVA/TIA in last 6 months.

Other types of prosthetic valves may confer moderate risk but should be discussed with cardiologist.

Other high risk conditions

- Severe mitral stenosis.
- VTE within the last 3 months.
- Severe thrombophilia (e.g. deficiency of protein C, protein S, or anti-thrombin, antiphospholipid antibodies).

Moderate Risk Conditions

- Less recent VTE (3-12mnths).
- Non-severe thrombophilia (e,g, heterozygous factor V Leiden or prothrombin gene mutation).
- Recurrent VTE.
- Cancer within the past 6 months confers moderate increased risk and management will require consideration of the bleeding risk (type of surgery).

Clopidogrel

- Establish indication for Clopidogrel therapy.
- If coronary stent insertion in the previous year/PTCA < 2 weeks/< 6 weeks since MI or stroke, contact cardiologist or physician responsible for stroke management for advice.
- Otherwise, discontinue Clopidogrel.
- For patients on dual aspirin and Clopidogrel, continue aspirin.
- Document date/time of last Clopidogrel dose.
- Proceed to surgery under General Anaesthetic 24hrs after last Clopidogrel dose.
- Recommence Clopidogrel on Day 1 Post-op.

Aspirin

- Continue throughout admission unless contraindicated.
- To continue if concurrently on Clopidogrel.

Dabigatran

- Delay surgery:
  - 24 hours if CrCL > 50
  - 48 hours if CrCL > 30 < 50
  - 72 hours if CrCL < 30
- The role of laboratory tests in assessing residual dabigatran effect at BOPDHB is evolving, but currently uncertain. It is possible that these tests may in the future be used to influence the timing of operation, and/or the choice of anaesthetic technique.

Rivaroxaban

- Delay surgery 24 hours after last dose.

Ticagrelor

- Patients presenting on this drug will likely have had recent insertion of a coronary stent, and perioperative management of this drug should be decided on a case by case basis in discussion with the surgeon and cardiologist. There is insufficient evidence available currently to advise on the optimal timing of fractured neck of femur surgery in patients taking this drug. Current advice is that neuraxial anaesthesia/analgesia should be avoided until 5-7 days after discontinuation of Ticagrelor, but this in itself is not an indication to delay surgery (unless there is a reason why general anaesthesia should be avoided).

Checklist of medications to be charted:

REGULAR MEDS:

Pain

- IV paracetamol 1g QID (consider weight adjusted dose reduction for the following: <50kg patients, malnutrition, chronic alcohol use, liver disease, enzyme inducing medication).
- Morphine/Fentanyl IV APP prescribed for pain.

Bowels

- Oral Docusate Sodium & Senna 2 tabs BD as per bowel regime.

DVT prophylaxis

- Aspirin 100mg OD for 6 weeks post operatively.
- Foot pumps to be applied on the ward on admission (if tolerated).
- Enoxaparin 40mg S/C OD if considered high risk (team to decide) whilst inpatient.
- Reduce Enoxaparin to 20mg S/C OD if eGFR < 30ml/min (use creatinine clearance for low weight patient).
- Do not apply compression stockings.

Nutrition

- IV fluids – Plasmalyte unless contra-indicated – rate dependent on hydration status.
- Offer two 200ml tetra packs of Nutricia Pre-op each morning pre-operatively to be completed before 0600.

AS REQUIRED:

- IV/oral Ondansetron 4mg TID
- Lactulose 15ml BD
- Lax-sachet 1 sachet BD
- Glycerin Suppository 2 OD
- +/- Geriatric review / checklist

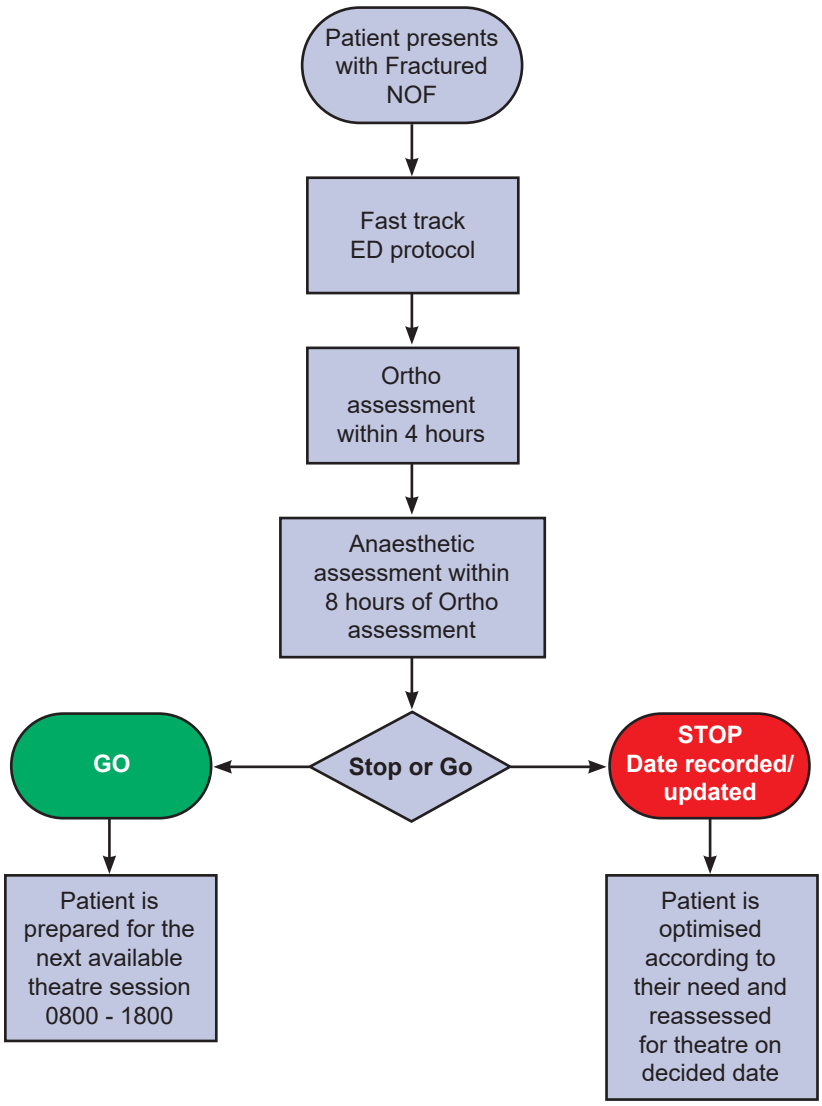
Orthopaedics - Registrar

- Review patient within 4 hours of admission from 08:00 to 20:00 (or the next morning if patient admitted > 20:00 unless medical issues).
- Early contact with anaesthesia / Geriatric team, mark/consent/book patient for theatre.
- Discuss equipment needs with theatre and ensure suitable equipment is in stock/ordered (e.g. PFNA).
- Discuss options with patient and family.
- Discuss resuscitation status with patient / EPOA (if issues with consent call anaesthesia early).
- Identify and treat correctable comorbidities immediately so that surgery is not delayed by:-
  - Anaemia
  - Anticoagulation
  - Volume depletion
  - Electrolyte imbalance
  - Uncontrolled diabetes.
  - Uncontrolled heart failure.
  - Correctable cardiac arrhythmia or ischaemia.
  - Acute chest infection.
  - Exacerbation of chronic chest conditions.
- Do not apply skin or skeletal pre-operative traction on admission.
- Traction may be applied at Consultant's discretion following post take ward round.

Ensure GO patients are prioritised on the acute list (0800 – 1800) and reassess STOP patients as necessary to ensure optimization for theatre as soon as possible

Anaesthesia

- #NOF patients to be preassessed by anaesthesia within 8hours of booking.
  - BUT ortho team may request ASAP assessment for patients anticipated to be suitable for GO pathway (to allow same day access when possible).
- Patients are designated either GO to theatre or STOP for optimization (see guidance below).
- GO patients get a green sticker on notes & booking form & are prioritised as next trauma case in hours (0800-completed by 1800), unless other more urgent cases.
- STOP patients need urgent input from ortho-geriatric registrar (within 24hours) – on weekends acute medical registrar
  - If anaesthesia team identifies need for STOP pathway then ortho team needs to be notified. Ortho team will arrange referral to ortho-geriatric reg and commence optimisation plan.
  - Ortho team may designate patient as STOP and commence optimisation while awaiting input from anaesthesia and orthogeriatric team.
  - The optimisation plan is primarily the responsibility of the orthogeriatric team. If the anaesthetist thinks this plan needs to be modified then this should be discussed with the ortho-geriatric registrar.
- STOP patients get a red sticker on booking form and notes, with a date for reassessment by anaesthesia (date they are anticipated to be ready).
- Duty Anaesthetist to check in the mornings and if there is a NOF patient ready for reassessment arrange review. Patient can be converted to GO once optimised or new date for assessment added to STOP sticker.



Acceptable Reasons to Delay Surgery	Inappropriate Reasons to Delay Surgery
• [Hb]<80 g/L • L [Na]<125mmol/L or recent decline to 125-130mmol/L from >135mmol/L or >148mmol/L • [K+]<2.8 or >6.0 mmol/L • Uncontrolled diabetes • Correctable cardiac arrhythmias with a ventricular rate >120 bpm • Chest infection with sepsis • Reversible coagulopathy	• Awaiting echocardiography if GA is not contraindicated* • Minor electrolyte abnormalities **Unacceptable organisational reasons to delay surgery** • Unavailable surgical expertise • Non availability of specialised equipment/ theatre space

*In general surgery should not be delayed in order to perform echocardiography. Patients with suspected stenotic valvular lesions or other conditions that may increase the risk of neuraxial anaesthesia can be managed presumptively with general anaesthesia & invasive monitoring. Non-urgent echocardiography can be requested in these patients post operatively. In the less likely scenario that neuraxial anaesthesia is likely to significantly improve patient outcome (e.g. very severe COPD or chest infection) then expedited pre-operative echocardiography can be requested by discussion with the on-call cardiologist.

Nursing – Acute Wards

- Take ED handover using ERAS pathway.
- Ensure patients next of kin aware of transfer to ward.
- Contact House Surgeon if patient needs clerking and inform of transfer to ward.
- If traction requested by orthopaedic team, arrange traction equipment through orderlies. Once applied, undertake traction cares as per protocol.
- Undertake pressure injury assessment and Waterlow score and if appropriate arrange pressure relieving mattress.
- Take clinical and neurological observations and then continue as per Early Warning Score (EWS) protocol. Ensure the EWS has been scored and actioned appropriately.
- Assess for pain using Pain Assessment Tool – note in adults with advanced dementia use PAINAD scale.
- Ensure adequate pain relief (nerve block, paracetamol, opioid protocol).
- If patient has a confirmed theatre slot then may have food up to 6 hours before surgery and clear fluids up to 2 hours before surgery. If patient theatre slot delayed >2 hours offer clear fluids Patient to be given 'Pre-op' Nutricia drink (x 2) prior to the two hours before surgery. Note: Patients with known diabetes or taking medication for diabetes not to be given drinks.
- Pre-op antiseptic wash and oral cares.
- Ensure usual medications are charted by House surgeon.
- Continue IV therapy- commence fluid balance chart.
- Check urinary output – aim 0.5ml/kg/hour.
- Provide oxygen as charted.
- Maintain patient temperature > 35.5 ˚C.
- Ensure the following completed:
  - Risk Assessments –including Falls.
  - History Assessment Form.
  - Implement bowel chart:
  - Check usual bowels habits.
  - What aperients normally taken (if any).
  - House surgeon to chart aperients for bowel regime.
  - Weight to be recorded if known.
- Attend to pressure area care as clinically indicated 1-2 hourly and provide heel supports as required.
- Check Rest Home Transfer Form in notes, ensure information from family recorded.
- Provide pathway booklet for patient/family.
- Re-assure and explain pathway to patient and family – notify next of kin once operating theatre time known.
- Refer to allied health staff as appropriate.
- Complete theatre check list.

Geriatrician or Delegate

- Patient to be assessed within 24 hours of admission (Monday-Friday) or by Medical Registrar on weekends.
- Complete initial assessment:
  - Background information check on Clinical Workstation.
  - Check results e.g. bloods, urine and radiology.
  - Check residential care transfer form – contact RH for essential information if needed.
  - Check living situation – supports.
  - Check general condition of skin, vision and hearing.
  - Check cognition and compare to any previous documentation.
  - Assess pre morbid function – mobility, basic exercise tolerance, (P)ADLS and ADLS.
  - Check medications – pre admission and currently charted including osteoporosis management.

- Alert staff to patients with high risk of Delirium e.g. previous delirium or dementia, and implement management strategies to reduce this risk.
- Ensure Delirium screen completed for confused patients – refer to guidelines.
- Liaise with Geriatrician regarding optimising management of patient.
- Liaise with Clinical Nurse Manager re expected date of transfer to orthogeriatric unit (OGU), Health in Aging (HIA) or Rehab beds.
- Attend Orthopaedic MDT weekly and review patient at least weekly.
- Partake in family meetings as appropriate.
- Ongoing education to patient, nursing staff, family.
- Check nursing care is being provided in line with best practice and evidence to support better outcomes.

ACC Clinical Co-Ordinator (NARS patients only)

- Review case notes, TrendCare, history, supports.
- Review notes, identify possible issues.
- Check ACC45 lodged.

OPERATING THEATRE

Organisational Priority

- Patients should be prioritised on the acute lists, (0800-1800hours).
- Surgery should be performed within 31 hours of admission.

The same rules should apply for weekends and public holidays.

If it is anticipated that a patient with a #NOF who is ready for theatre will not receive their operation within the next 24hours due to resource issues this should be brought to the attention of the coordinating theatre team (theatre nursing co-ordinator, on-call orthopaedic surgeon, and duty anaesthetist) in order to discuss the available options. If the resource issues are unable to be resolved at this level then the matter should be escalated to the service leadership for advice.

Surgical

- Surgery should aim to achieve full weight bearing status (without restriction) in the immediate postoperative period, unless specified in the operative report.
- Should full weight bearing status not be recommended, this should be clearly documented in the notes using the definitions in the table below.
- Perform replacement arthroplasty (hemiarthroplasty or total hip replacement) in patients with a displaced intracapsular fracture.
- Discuss total hip replacements in to patients with a displaced intracapsular fracture who:
  - were fit, active independent ambulators
  - are not cognitively impaired and
  - are medically fit for anaesthesia and the procedure.
- Use cemented implants for hemiarthroplasty unless contraindicated.
- Consider anterolateral approach for hemi-arthroplasties.
- Use extramedullary implants such as a sliding hip screw in preference to an intramedullary nail in patients with trochanteric fractures above and including the lesser trochanter (AO classification types A1 and A2).
- Use an intramedullary nail for patients with Subtrochanteric fractures.
- Avoid use of surgical drains.
- Ensure Image Intensifier images are saved onto PACS during DHS / Cannulated screws / IM Nail fixation.
- High Volume Local Anaesthetic – soft tissue infiltration from deep to superficial. 0.2% Naropin (2mg/kg total dose)
- Consider tranexamic acid, discuss with anaesthetist.

Check with Anaesthesia regarding other local anaesthetic administration and adjust dose as necessary.

Definitions of weight bearing status:	
Non Weight Bearing (NWB):	Patient can hop on their unoperated leg. The operated leg is off the ground.
Touch Weight Bearing (TWB):	The foot or toes may touch the floor (such as to maintain balance), but not support any weight. The weight of the leg on the floor while taking a step should be no more than 5% of the body weight.
Partial Weight Bearing (PWB):	The patient may apply 50% of their body weight through their operated leg maintain a heel toe gait.
Full Weight Bearing or Weight Bearing as Tolerated (fwb OR wbat):	The patient is allowed to put all pressure through the operated leg.

Anaesthesia

- Little evidence to support the use of one anaesthetic technique over another for NOF fracture patients.
- Tailor the anaesthetic approach to each individual.
- Minimise/avoid use of midazolam.
- Consider low dose spinal anaesthetic where possible.
- Administer induction antibiotics – IV Cephazolin 2g (unless allergies) (Consider reduction dose to 1g if eGFR ≤ 30 ml/min).
- Consider tranexamic acid, discuss with surgeon.
- Apply warm blankets or bair hugger to avoid intra-operative hypothermia.
- Stockings or intermittent calf compressors should be used intraoperatively.
- Use IV fluids cautiously depending on patient's hydration status and cardiac function.
- Administer antiemetics.
- Prescribe oxygen – Preferably nasal, target sats ≥93%, 88-92% if risk of hypercapnic respiratory failure.
- Analgesia:
  - Administer paracetamol.
  - Carefully titrated opioids – Type and dose depends on patient's regular medications, renal function, allergies and co-morbidities.
  - Consider PCA if cognitively intact.
  - Consider peripheral nerve blockade (e.g. fascia iliaca block) whether GA/spinal anaesthetic.

RECOVERY/ACUTE WARD (POST-OPERATIVE)

Day of Surgery

Surgical

- Antibiotics
  Total Hip replacement and Hemiarthroplasty - Continue two more doses of IV Cephazolin 2g TID post-operatively (Consider reduction dose to 1g TID if eGFR ≤ 30 ml/min).

  All other methods of fixation – no further Antibiotic unless indicated for other reasons.
- Check wound and reinforce as required.
- Confirm weight-bearing status.
- Ensure post-op X-ray satisfactory.
- Analgesia – As the peripheral nerve blockade wears off, administer paracetamol regularly with carefully prescribed opioid analgesia as required.
- Fluids – Hypovolaemia is common post operatively and oral fluid intake should be encouraged over the intravenous route where possible.
- Prescribe oxygen – Preferably nasal, target sats ≥93% (88-92% if risk of hypercapnic respiratory failure).

Nursing – Acute Wards

- Take clinical and neurological observations and then continue as per EWS protocol. Ensure the EWS has been scored and actioned appropriately.
- Assess for pain using Pain Assessment Tool.
- Ensure adequate pain relief (nerve block, paracetamol, opioid protocol).
- Monitor wound/check dressing/ reinforce as required.
- Administer IV antibiotic, fluids, oxygen and antiemetics as charted.
- Encourage deep breathing and leg exercises.
- Hygiene cares.
- Pressure area assessment and care/heel supports/check elbows, scapula and sacrum each shift.
- Monitor and report on cognition/signs of delirium.
- Administer patient's usual medications as charted.
- Maintain Fluid Balance Chart – offer fluids and maintain IV fluids as charted (monitor if on fluid restriction).
- Offer the patient sandwiches or alternative meal 3 – 4 hours post-surgery.
- Re-assess Falls Risk.
- Check mobility status and encourage early mobilisation.
- Check appropriate referrals made.
- Give family/Carer/NOK update and explain pathway.
- Document variances daily.

Geriatrician or Delegate

- Patient to be assessed within 24 hours of admission (Monday-Friday) or by Medical Registrar on weekends.
- Complete initial assessment if not already complete:
  - Background information check on Clinical Workstation.
  - Check results e.g. bloods, urine and radiology.
  - Check residential care transfer form completed - contact RH for essential information if needed o Check living situation – supports.

- Check general condition of skin, vision and hearing.
- Check cognition and compare to any previous documentation.
- Assess pre morbid function – mobility, basic exercise tolerance, (P)ADLS and ADLS.
- Check medications – pre admission and currently charted including osteoporosis management.

- Alert staff to patients with high risk of Delirium e.g. previous delirium or dementia, and implement management strategies to reduce this risk.
- Ensure Delirium screen completed for confused patients – refer to guidelines.
- Liaise with Geriatrician regarding optimising management of patient.
- Liaise with Unit Clinical Nurse Manager re expected date of transfer to orthogeriatric unit (OGU), Health in Aging (HIA) or Rehab beds.
- Attend Orthopaedic MDT weekly and review patient at least weekly.
- Partake in family meetings as appropriate.
- Ongoing education to patient, nursing staff, family.
- Check nursing care is being provided in line with best practice and evidence to support better outcomes.

Day 1

Surgical

- Aspirin 100mg OD for 6 weeks post operatively.
- Foot pumps to be applied on the ward on admission (if tolerated).
- Enoxaparin 40mg S/C OD if considered high risk (team to decide) whilst inpatient.
- Reduce Enoxaparin to 20mg S/C OD if eGFR < 30ml/min (use creatine clearance for low weight patient).
- Do not apply compression stockings.
- Review analgesia and convert to oral as appropriate.
- All patients are full-weight bearing unless otherwise specified.
- Check Full Blood Count, Electrolytes, Creatinine and eGFR.
- Consider RBC transfusion if Hb < 80g/l or Hb < 90g/l with a history of ischaemic heart disease.
- Once patient mobilising consider written referral to Older People's Health and Rehabilitation Service (see criteria below).
- Aim for all lines/catheters to be removed to promote mobility.
- Review Oxygen therapy and prescribe if required - Preferably nasal, target sats >93%, 88-92% risk of hypercapnic respiratory failure.
- For patients on warfarin:-
  - Establish Pre-operative maintenance dose of warfarin.
  - Establish any complication with surgery in consultant ward round
  - Establish target INR.
  - Commence warfarin Day 1 Post-op o Check INR daily.
  - Continue Enoxaparin bridging until target INR is achieved.

Nursing – Acute Wards

- Discuss pathway and plan with patient.
- Take clinical and neurological observations and then continue as per EWS protocol. Ensure the EWS has been scored and actioned appropriately.
- Assess for pain using Pain Assessment Tool – note in adults with advanced dementia use PAINAD scale.
- Ensure adequate pain relief (nerve block, paracetamol, opioid protocol.
- Administer usual medications.
- Administer IV antibiotic, fluids, and oxygen as charted.
- Complete 24 hours of post-operative IV antibiotics.
- Encourage deep breathing, foot and ankle exercises and circulatory exercises.
- Maintain Fluid Balance Chart.
- Review Delirium status (CAM).
- Remove IDC at 6am day 1 post-op unless otherwise stated (if not removed record as a variance).
- Check ESBL screen sent/result
- Monitor bowel actions and ensure aperients charted as per bowel regime.
- Monitor wound/check dressing.
- Provide Pressure area assessment and care/review risk assessment.
- Provide hygiene cares.
- Weight bearing status confirmed and documented.
- Encourage and support mobilisation – aim to step around chair within 24 hours of surgery.
- Aim to sit up in chair for meals.
- Check dietitian referral completed.if required
- Provide family/NOK update.
- Document variances daily.

Geriatrician or Delegate

- Patient to be assessed within 24 hours of admission (Monday-Friday).
- Complete initial assessment if not already completed:
  - Background information check on Clinical Workstation.
  - Check results e.g. bloods, urine and radiology.
  - Check residential care transfer form completed - contact RH for essential information if needed o Check living situation – supports.
  - Check general condition of skin, vision and hearing.
  - Check cognition and compare to any previous documentation.
  - Assess pre morbid function – mobility, basic exercise tolerance, (P)ADLS and ADLS.
  - Check medications – pre admission and currently charted including osteoporosis management.
- Alert staff to patients with high risk of Delirium e.g. previous delirium or dementia, and implement management strategies to reduce this risk.
- Ensure Delirium screen completed for confused patients – refer to guidelines.
- Liaise with Geriatrician regarding optimising management of patient.
- Liaise with Unit Clinical Nurse Manager re expected date of transfer to orthogeriatric unit (OGU), Health in Aging (HIA) or Rehab beds.
- Attend Orthopaedic MDT weekly and review patient at least weekly.
- Partake in family meetings as appropriate.
- Ongoing education to patient, nursing staff, family.
- Check nursing care is being provided in line with best practice and evidence to support better outcomes.

ACC Clinical Co-ordinator

- Ensure discussion at daily (Monday to Friday) ward Rapid rounds meeting.

Allied Health

Allied health to screen and establish patient-centred goals. Identify allied health lead clinician for each patient. Representation from Allied Health to attend daily (Monday to Friday) rapid round meetings. Patient EDD and discharge location and pathway identified.

Physiotherapy

- Assess chest, bed mobility, and lower limb muscle strength.
- Teach hip precautions if Hemiarthroplasty or Total Hip Joint Replacement.
- Breathing and circulatory exercise (if appropriate).
- Teach bed exercises.
- Assess transfers or mobilise.
- Aim to sit out in chair.
- Weight bearing status clarified and type of aid documented on pathway.
- Set goals for the next 2 days with patient and family and document.
- Daily physiotherapy input (Monday - Friday).

Dietitian

All patients are to be weighed and the MST score completed using this new weight. All patients who score MST 3 or above should be referred to the dietitian.

Social Work

- Complete Social Assessment unless done prior.
- Action any appropriate referrals.
- Convene and attend family meetings as required.

Day 2

Surgical

- Clinical review and document any changes to plan.
- Once patient mobilising consider written referral to Older People's Health and Rehabilitation Service (see criteria below).

Nursing – Acute Wards

- Discuss pathway and plan with patient.
- Take clinical and neurological observations and then continue as per EWS protocol. Ensure the EWS has been scored and actioned appropriately.
- Assess for pain using Pain Assessment Tool – note in adults with advanced dementia use PAINAD scale.
- Ensure adequate pain relief administered.
- Administer usual medications Monitor wound/check dressing.
- Encourage deep breathing, foot and ankle exercises and circulatory exercises.
- Monitor and report on cognition.
- Monitor bowel actions and ensure aperients charted as per bowel regime. Bowel intervention if Bowels Not Open.
- Pressure area assessment and care/review risk assessment.
- Sit in chair for meals am and pm.
- Encourage and support mobilisation.
- Dress in day clothes.
- Provide family/carer/NOK update.
- Document variances daily.

Geriatrician or Delegate

- Complete re-assessments as required:
  - Background information check on Clinical Workstation.
  - Check results e.g. bloods, urine and radiology.
  - Check residential care transfer form completed – contact RH for essential information if needed o Check living situation – supports.
  - Check general condition of skin, vision and hearing.
  - Check cognition and compare to any previous documentation.
  - Assess pre morbid function – mobility, basic exercise tolerance, (P)ADLS and ADLS.
  - Check medications – pre admission and currently charted including osteoporosis management.
- Alert staff to patients with high risk of Delirium e.g. previous delirium or dementia, and implement management strategies to reduce this risk.
- Ensure Delirium screen completed for confused patients – refer to guidelines.
- Liaise with Geriatrician regarding optimising management of patient.
- Liaise with Unit Clinical Nurse Manager re expected date of transfer to orthogeriatric unit (OGU), Health in Aging (HIA) or Rehab beds.
- Attend Orthopaedic MDT weekly and review patient at least weekly.
- Partake in family meetings as appropriate.
- Ongoing education to patient, nursing staff, family.
- Check nursing care is being provided in line with best practice and evidence to support better outcomes.

ACC Clinical Co-Ordinator

- Respond to issues as they arise.
- Reinforce pathway.
- Overview and explanation of care plan to patient / family.
- Organise completion of AROC and FIM as appropriate for NARS patients.

Allied Health

Representation from Allied Health to attend daily (Monday to Friday) rapid round meetings.

Physiotherapy

- Daily physiotherapy input (Monday - Friday).
- Aim to sit out in chair am and pm.
- Reinforce hip precautions if hemi or THR.
- Bed, sitting and standing exercises, progressed as appropriate.
- Mobilise with crutches or appropriate walking aid.
- Begin discharge planning / transfer to HIA.

Occupational Therapy

- Reinforce hip precautions as appropriate.
- Initial interview if not completed.
- Functional assessment.

Dietitian

- All patients to be weighed weekly
- Dietary supplements to be prescribed as needed

Social Work

- Ongoing input with the patient and family as appropriate.

Day 3 Onward

Surgical

- Clinical review and document any changes to plan.
- Once patient mobilising consider written referral to HIA (see criteria below).
- Check ESBL Screen was sent prior to transfer to HIA.
- Ensure bone protection medication chosen and prescribed before discharge if not transferring to HIA care.

Nursing – Acute Wards

- Discuss pathway and plan with patient.
- Take clinical and neurological observations and then continue as per EWS protocol. Ensure the EWS has been scored and actioned appropriately.
- Assess for pain using Pain Assessment Tool – note in adults with advanced dementia use PAINAD scale.
- Ensure adequate pain relief administered.
- Administer usual medications.
- Monitor wound/check dressing.
- Encourage deep breathing, foot and ankle exercises and circulatory exercises.
- Encourage and support mobilisation.
- Monitor and report on cognition/delirium.
- Monitor bowel actions and ensure aperients charted as per bowel regime. Bowel intervention if Bowels Not Open.
- Pressure area care/review risk assessment.
- Sit in chair for meals.
- Dress in day clothes.
- Discuss pathway and plan with patient.
- Provide family/carer/NOK update.
- Document variances daily.

Geriatrician/CNS

- Complete re assessments as required:
- Ensure Delirium management optimised for confused patients – refer to guidelines.
- Liaise with Geriatrician regarding optimising management of patient.
- Liaise with Unit Clinical Nurse Manager re expected date of transfer to orthogeriatric unit (OGU), Health in Aging (HIA) or Rehab beds.
- Attend Orthopaedic MDT weekly and review patient at least weekly.
- Partake in family meetings as appropriate.
- Ongoing education to patient, nursing staff, family.
- Check nursing care is being provided in line with best practice and evidence to support better outcomes.

ACC Clinical Co-ordinator

- Respond to issues as they arise.
- Provide overview and explanation of care plan to patient / family.
- Complete 705 for NARS patients. If appropriate for NAR contract, complete request for NAR and email to ACC. Liaise with MDT to commence NAR setting goals. Notify Orthopaedic Consultant of NAR contract.
- Complete NAR referral, FIM. Organise goal setting with MDT, update regularly.
- Complete AROC and FIM before transfer to HIA if in orthogeriatric bed on 4B Tauranga.

Allied Health

Representation from Allied Health to attend daily (Monday to Friday) rapid round meetings.

Physiotherapy

- Daily physiotherapy input (Monday-Friday as required).
- Bed, sitting and standing exercises, progressed as appropriate.
- Mobilise with crutches or appropriate walking aid and organise appropriate aid for discharge.
- Undertake step assessment when ready and if required.
- Identify if patient is ready for discharge on critical pathway – can get in/out of bed independently, walk safely and independently and is safe on stairs.
- Liaise with ACC Case Manager if physiotherapy in the home is required or advise patient to seek ACC physiotherapy privately.
- Clear handover to HIA physiotherapist regarding progress to date and goals of therapy if patient being transferred.

Occupational Therapy

- Complete a functional transfer assessment.
- Complete an ADL assessment if required.
- Assess and provide necessary adaptive equipment.
- Identify if patient is ready for discharge on critical pathway – can wash, dress and toilet independently.
- Identify any support needs for discharge.
- Reinforce post op hip precautions.
- Handover to Rehab/HIA Occupational Therapist regarding progress and goals for discharge as appropriate.

Dietitian

- Review as needed.
- Clear handover to HIA dietitian regarding progress and goals for treatment.
- Start on standard HIA diet with snacks, nutritional supplements and extras as appropriate.
- Continue weekly weigh in HIA.

Social Work

- Ongoing input with the patient and family as appropriate.

DISCHARGE OR TRANSFER TO HIA AND INPATIENT REHABILITATION SERVICES

Discharge or transfer from the acute wards can occur to the following services and is determined by the interdisciplinary team. The criteria for each of these services are outlined below:

Home

Discharge Criteria

Patients should have the following completed:

- Education complete and discharge section of pathway explained (including follow-up services).
- Multidisciplinary clearance.
- Adequate home support or independent with self cares (with or without equipment).

Residential Care Facility

Discharge Criteria

Patients previously residing in a residential care facility or now requiring higher level of care should be discharged back to this facility in a timely manner once deemed medically and functionally optimised by the MDT. Provided the following:

- Oral intake has resumed.
- Oxygen saturation has returned to baseline.
- Bowels have opened during hospital stay.
- Any medical issues likely to lead to a rapid readmission have been stabilised.
- It is deemed in the patient's best interest to return for ongoing care and support with agreement from their family and the facility.
- Level of care needs have been identified and appropriate assessments completed.

HIA Inpatient Ward Tauranga – Fast or Transitional care facility

Service Entry Criteria

Patients with #NOF or # femoral shaft who are orthopaedically stable and not medically unstable to the extent they would not benefit from transfer, will be transferred to HIA under the fast-track process or transitional care facility.

Exclusion Criteria – unless accepted by a geriatrician:

- Patient requiring safety watch.
- Patient already at a very high care needs level (hospital or Level 5 care).
- Patient in psychogeriatric residential bed.
- Patient under palliative care.
- Patient in a Stage 3 (dementia) bed with significant BPSD.
- Patients or welfare guardians who don't wish for a rehabilitative approach to care.
- Patient who is non or touch weight bearing.

OGU Beds (TGA) or Rehab Beds (WHK)

Service Entry Criteria

Patients with #NOF or # femoral shaft who are orthopaedically stable and medically stable enough to benefit from a rehabilitative approach and that have not yet been accepted for imminent transfer to HIA.

Patients in OGU Beds in Tauranga will continue to be managed by the Ward allied health team for the OGU beds.

SUB ACUTE CARE (HIA or INPATIENT REHABILITATION BEDS OGU or TRANSITIONAL CARE FACILITY)

Surgical

- Weekly Consultant review on OPHRS ward.

Geriatrician

- Review current admission and previous medical history/status (with family if necessary).
- Full physical examination.
- Functional assessments – pre-admission and current.
- Cognitive assessment – with collateral history from family if necessary.
- Review medications and change as necessary.
- Formulate accurate problem list.
- Formulate medical management plan to optimise physical and mental health.
- Consider falls aetiology/risk.
- Optimise osteoporosis management.
- Partake in MDT rehabilitation to optimise outcome and achievement of goals.
- Co-operate and communicate with patient, family and team to achieve safe, appropriate discharge.
- Advise on post discharge follow up.

Nursing –Ward

- Ensure all necessary care plans and paper work is up to date and completed.
- Ensure all assessments have been completed and a EDD identified.
- Follow rehab protocols ie lying and standing blood pressure for 48 hours/dress in own clothes.
- Weigh weekly.
- Provide holistic nursing care.
- Follow assessment from Allied health team re mobility transfers etc.
- Discuss with patient/family nursing rehab goals and complete goal sheet as appropriate.
- Complete FIM score if not completed by ACC Clinical Co-ordinator.
- Attend weekly MDT and give nursing feedback to team discuss goals and follow recommendations from team meeting.
- Provide on-going support to patient/family to allow them to reach rehab goals.
- Encourage family participation in rehab as appropriate.
- Complete FIM score on discharge.
- Complete discharge documentation depending on discharge destination ie discharge summary , or rest home transfer form.

Allied Health

Physiotherapy

- Ensure clear verbal and written handover from acute ward physiotherapist regarding progress to date and goals of therapy.
- Complete initial assessment.
- Review and document patient goals.

- Input to maximise patient gains.
- Establish and practice transfers and mobility.
- Optimise joint range of movement.
- Optimise muscle function targeting strength, functional, proprioceptive and cardiovascular systems.
- Liaise with MDT re physiotherapy goals, intended discharge date and destination.
- Set up with home exercise program and determine appropriate follow up.

Occupational Therapy

- Review Initial interview information: Home environment.
- Functional transfer assessment...
- Personal ADL assessment and practice if indicated.
- Meal prep assessment and practice (as appropriate).
- Cognitive assessment (as appropriate).
- Assessment and provision of necessary adaptive equipment.
- Establish need for supports on discharge.
- Home visit as required (pre discharge or on discharge).
- Equipment provision on discharge.
- Organise follow up as appropriate.

Dietitian

- Ensure patient is tolerating supplements, following instructions and adjust dietary intake as needed.
- Make recommendation regarding dietary needs for home.
- Establish entitlement to prescription for nutritional supplements if appropriate.
- Organise follow up telephone call or outpatient appointment if indicated.

Social Worker

- Review Social Assessment.
- If required convene a Family Meeting.
- Discuss discharge destination with patient.
- Contact appropriate family members re discharge destination.
- Co-ordinate supports as necessary to aid discharge home.
- Co-ordinate residential care transfer if necessary.
- Co-ordinate care needs and financial assessments if necessary.

DISCHARGE

For a patient to be discharged to the following range of facilities they should meet the following:

	Home	Rest Home Level Care (ARC)	Hospital Level Care (ARC)
Physiotherapy	• Independent with appropriate walking aid • Independent in/out of bed • Access issues resolved • e.g. ramp/steps • Able to undertake exercises independently • Follow up organised with ACC	• Assistance x1 transfers and mobility • Follow up organised with rest home physios	• Assistance x2 transfers and mobility • Follow up organised with rest home physios
Occupational Therapy	• Independent with bed/chair/toilet transfers with or without adaptive equipment • Independent with toileting self • Independent or one to assist with accessing property with or without adaptive equipment • Independent or one to assist with shower/bathing or dressing tasks • Independent with light snack and drink preparation (if lives alone) • Identification and management of other barriers to returning safely e.g. environmental, cognitive	• Assistance x1 for personal care tasks/ ADLs	• Assistance x1-2 for ADLs
Dietitian	• Eating and drinking comfortably • Eating minimum ¾ meals daily (approx. 1000Cal/day) • Has recommendation regarding dietary needs for home id under the care of the dietitian • Has prescription for nutritional supplements if entitled		
Social Worker	• Adequate home support (if needed) • No immediate safety concerns • Financial assessment completed	• Refer if change level of care	• Vacancy at rest home • Discussed with family • Financial assessment completed • Personal orders reviewed

POST DISCHARGE FOLLOW UP

Surgical

Follow Up

2 week wound check routine

Beyond 6 weeks

- Total hip arthroplasty as per ERAS protocol.
- Hemiarthroplasty discharged on SOS unless complications.
- DHS, Cannulated screws and IM Nails followed up until fracture healed and then discharged on SOS unless complications.
- Patients under <65 years old at Consultant's discretion.

Allied Health

Physiotherapy

Liaise with ACC Case Manager if physiotherapy in the home is required or advise patient to seek ACC physiotherapy privately.

Occupational Therapy

Refer to ACC for long term equipment needs (ACC4249).

NOTES:

NOTES:

November 2021