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Fascia iliaca block toolkit

A method of preoperative pain management in older people with acute hip fractures

SEPTEMBER 2022

NSW GOVERNMENT
AGENCY FOR CLINICAL INNOVATION
Pain Management Network

The information in this document should not replace a clinician's professional judgement.

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Further copies of this publication can be obtained from the Agency for Clinical Innovation website at **aci.health.nsw.gov.au**

Preferred citation: NSW Agency for Clinical Innovation. Fascia Iliaca Block Toolkit: A method of preoperative pain management in older people with acute hip fractures (Version 2). Sydney: ACI; 2022.

SHPN (ACI)210375

ISBN 978-1-76081-740-4

Version: V2; ACI_1436 [09/22] Date amended: September 2022

Trim: ACI/D22/1904

Contents

Introduction

In Australia, there are approximately 17,000 new hip fractures each year.[1] These predominantly affect older people. Traditionally, pain relief is in the form of opiates. Use of opiates alone or in high doses is known to have adverse effects, such as delirium. There is therefore a need to improve outcomes. Reduction in opiates by use of fascia iliaca blocks (FIB) has been shown to improve preoperative pain control.

FIB as a method of pain relief in acute hip fractures of older people

This toolkit has been developed on the initiative of the St Vincent's Hospital, Emergency Department, Acute and Chronic Pain Services, Pain in the Elderly Working Party and with the guidance of an ACI steering group. The guide and training materials have been developed for those centres wishing to pursue FIB as a means of improving pain management in the care of older people with hip fractures. The objective is to minimise the risk of delirium and associated harm related to opioid prescription in the ambulance, emergency departments and wards prior to surgery.

Background

St Vincent's Hospital Emergency Department and Pain Service had begun a process of using FIBs as the preferred method of pain management for older people admitted with suspected or confirmed hip fractures to minimise the incidence of delirium and harm before and after surgery. Many supporting tools and resources were developed as part of this project. St Vincent's Hospital approached the ACI as it felt that there was relevance to other hospitals wishing to pursue this technique, and duplication of effort would be avoided if the materials were supported through an ACI process.

A steering committee was convened and has overseen the development of the resources to ensure alignment with evidence, current practice, variation in service design and staffing, and applicability across the state.

Objectives

- To provide tools and resources to enable the use of FIB as an option in providing effective pain relief in patients with acute hip fracture.
- To ensure patients with suspected or confirmed acute hip fracture are provided with safe and effective best practice preoperative pain relief. Specifically the documentation refers to ultrasound-guided FIB utilising an out-of-plane approach.

The out-of-plane approach has been selected as it is a safer approach for those training in ultrasound-guided FIB, however there is a range of other options or techniques. The out-of-plane approach allows for easily viewable needle trajectory in the complimentary videos. These documents are to support ultrasound-guided FIB training and should be used together with clinical training and observation.

This toolkit is designed to be complementary to the *Fascia Iliaca Block Guide: a method of preoperative pain managment in older people with acute hip fractures* (the Guide), which describes the procedure.

NB: Other options or techniques for administration of regional analgesia for fractured neck of femur, including in-plane ultrasound guided and blind double-pop FIB and femoral nerve blocks, are not addressed in this documentation but may be considered as local governance, clinical preference and proficiency allow.

This toolkit is a guideline only and is designed to be adapted to meet the needs of local hospitals and health districts. Local policies and clinical governance frameworks must be in place before implementing a FIB program.

Training benefits

The benefits of implementing FIB training include:

- a reduction in adverse events or poor patient outcomes
- a reduced length of stay and less complications related to delirium
- improved patient experience
- improved skill sets for staff involved in treating patients with hip fractures
- improved staff satisfaction
- improved efficiencies.[2]

About the implementation toolkit

This implementation toolkit has been developed to support NSW health facilities to have the appropriate governance to successfully implement FIBs. This includes training, accreditation, staffing, equipment, patient volume, infrastructure and supervision in place.

The implementation support materials provided by the ACI and St Vincent's Hospital Pain in the Elderly Working Party include:

- implementation guide
- explanatory guide and notes
- video material of how to conduct the procedures
- accreditation and training materials
- audit tool
- patient and carer information brochure.

The toolkit outlines the following steps to implement FIB in your facility:

- ascertain facility readiness
- plan
- assess
- operationalise
- evaluate.

Ascertain facility readiness and capability

A review of local governance and service structure will be necessary to consider whether the service has the capacity to provide adequate clinical competence, supervision and training to safely carry out the procedure on a routine basis.

A review of the volume of patients presenting at the service with hip fracture and the outcome of their treatment may be useful to inform the local governance review.

Plan

Purpose

The purpose of the project planning phase is to:

- obtain local sponsorship to support the implementation of FIB
- define the key members of a project team and working group
- set a clear goal, objectives and scope.

Allocate an executive sponsor to authorise the work

It is essential to identify a member of the local health district (LHD) executive as the project sponsor. This should preferably be the director of clinical governance.

A clinical lead also needs to be identified. This could be the head of the anaesthetic or emergency department, a nominated anaesthetist, emergency physician or other critical care specialist or a nurse consultant or educator.

The role of project sponsor and clinical lead is not just to support the project, but to:

- determine and monitor progress and outcomes
- support and promote cultural change
- provide visible and active leadership and commitment to the project with all levels of staff
- align the goals and objectives of the project at executive and strategic level to the hospital and LHD operational plans
- assess, monitor and manage risks associated with implementation and assist in resolving issues and barriers escalated by the project manager or working group.

Identify a project lead

It is recommended that for the implementation period, a member of the team is allocated the role of project lead. The project lead will:

- lead the implementation
- facilitate meetings
- effectively communicate with and engage staff and clinicians in the project
- evaluate the process, communicate and monitor outcomes
- escalate ongoing implementation issues to the executive sponsor.

Establish a working group

It is recommended that the working group is multidisciplinary and represents clinical and non-clinical teams that care for patients undergoing FIB procedures. Where possible, the working group should include membership from affected specialty departments.

Representatives should include:

- physicians in emergency medicine
- physicians in geriatric medicine
- pain management specialists
- orthopaedic consultants
- anaesthetists
- consumers
- nurse educators, clinical nurse consultants or educators
- pharmacists.

In rural areas, representatives can include:

- general practitioners
- nurse managers or nurse educators
- clinical nurse consultants
- pharmacists
- consumers
- specialists in fields such as geriatrics, orthopaedics or anaesthetics, as available.

Clinical governance professionals and managers should also be involved as appropriate and available. Both nursing and medical staff should be represented.

The role of the working group is to:

- execute the implementation ensuring that agreed actions and project milestones are delivered
- effectively communicate and engage staff and clinicians in the project
- develop local solutions as needed
- monitor and evaluate project outcomes.

Define the goal, objectives and scope

A clear project goal, specific project objectives and a well-defined scope are important to ensure that members of the project team are working towards the same goal. As the project team is likely to include multiple specialty groups, it is important the project goal, objectives and scope are agreed upfront by all members of the working group.

Communication plan

Well planned communications with staff and stakeholders within the LHD will be essential to the success of the project. Planning includes:

- developing consistent key messages
- identifying and targeting communication to specific stakeholders
- scheduling communication to align with key time points during your project
- ensuring that feedback loops are in place for all communication.

Assess

Purpose

The purpose of the assessment phase is to collect and analyse data about current processes for the provision of FIB.

Conduct an audit of current practice

Collecting baseline data allows the service to identify the key issues or gaps in current practice. Understanding the current context will allow the service to identify where improvements can be made.

The assessment phase should include:

- determining the service's baseline measures and outcomes preimplementation; for example, conduct an audit of roughly 20% of the elderly hip fracture population (see Appendix 1 for example of an audit form)
- providing timely, regular audit feedback to clinical staff
- identifying and prioritising issues raised through the audit and other measures
- reviewing local policies and modifying to ensure consistency with the protocol.

Operationalise

FIB training

Adopt a train the trainer approach, using *the FIB Guide*, FIB video, clinician logbook, accreditation documents and audit tool as a framework. The working group may wish to modify or add additional items to meet local governance arrangements.

Identify key champions, such as an emergency department physician, anaesthetist or nurse educator, to oversee the training process.

Contact St Vincent's Hospital emergency eepartment if there is a need to access training off site.

FIB accreditation process

To be considered for FIB accreditation it is recommended nursing staff are experienced ED nurses working at an advanced practice level, for example clinical initiatives nurses. (who undertake advanced practice), advanced practice nurses, nurse practitioners or transitional nurse practitioners.

Nurses wishing to obtain FIB accreditation must have approval from their direct line manager (or higher depending on the requirements at local sites).

Accreditation of medical staff will be determined at a local level, e.g. resident medical officer or registrar; and should be outlined in the local policy.

Local sites may choose to add further requirements if deemed necessary. Tight governance over the accreditation process is strongly recommended to ensure the quality of the accreditation program and maintain patient safety.* Accreditation requirements must be included in local FIB policies.

To obtain FIB accreditation the following seven steps must be met by medical and nursing staff.

1. Read the relevant local procedures and policies.
2. Watch FIB video.
3. Attend FIB training workshop.#
4. Observe accredited clinician inserting FIB.
5. Perform FIB insertion under direct supervision from accredited FIB clinician.
    a. Minimum five observed FIBs for nursing staff and junior medical staff.
    b. Minimum two observed FIBs for registrars.
6. Complete FIB clinical competency assessment tool≠≠ for each observed FIB (ensure copies are kept on record in the clinician's logbook^).
7. Complete online quiz (via MyHealth Learning).

Additional requirements

If staff, medical and nursing, have no previous ultrasound experience it is highly recommended they attend an 'introduction to ultrasound course' and gain accreditation in ultrasound guided peripheral access prior to undertaking FIB accreditation.

Further ultrasound guided peripheral access resources are available.

* Annual reaccreditation is not mandatory. It will be left to the discretion of local leads to determine reaccreditation requirements (if any). If staff are required to be reaccredited, the requirements must be outlined in the local FIB policy.

For step 3

#Need to determine the local staff to deliver FIB workshops. Ideally an ED consultant lead with support from anaesthetist.

The FIB Guide outlines content to include in the training i.e. how to perform the FIB.

Use the FIB Toolkit to set up FIB workshop.

For step 6

≠≠Copy of clinical competency assessment tool at Appendix 4.

^Copy of logbook at Appendix 3.

Evaluation

The purpose of evaluation is to assess the success of the implementation of the FIB protocol. It is important to measure the outcomes of your project to:

- determine if there has been any improvement in practice
- identify any solutions that are not working and require reassessment
- satisfy accountability requirements
- enable more informed decisions in regards to future improvement planning.

Evaluation measures, such as audits, patient satisfaction and outcome measures should be considered during the project development and aligned to the project aims. They are critical to measuring success. Clear and measurable objectives will help clarify what is to be evaluated.

Reassess your performance

During the baseline assessment phase, data will have been collected through a number of methods.

Repeating this assessment after implementation and for the purposes of ongoing monitoring will allow you to measure change or improvements in practice.

Sustainable implementation

Remember that the implementation project end date is not really the end.

The project manager or working group should plan to review the provision of FIB at regular intervals. This may be quarterly, half-yearly or yearly depending on the extent of changes that occurred during the implementation project.

Communicate your success

By this point in the implementation project, many staff and other stakeholders will be familiar with the project and may have contributed to it in some way.

It is important to recognise and celebrate the contribution of the project manager, working group, staff and the stakeholders involved in the implementation at your site. Communicate the outcomes of the reassessment, particularly if there is significant improvement.

Further information

Redesign methodology

For further information about redesign methodology, see the ACI Centre for Healthcare Redesign.

Redesign methodology tools are designed to provide access to flexible learning opportunities. Modules and assessments can be completed at each individual's own pace and at a time that suits them.

Links to other ACI work

Key principles for care of confused hospitalised older persons

The Care of Confused Hospitalised Older Persons Program (CHOPS) aims to improve the early identification and management of older people with confusion in hospital. Patients who experience greater pain are at higher risk of delirium and depression. Early identification of confusion, treatment of the underlying cause and management of symptoms can prevent these adverse effects and minimise their duration and severity.

Read more about the Care of Confused Hospitalised Older Persons Program.

Leading Better Value Care Hip Fracture

The ACI is addressing hip fracture care as a priority issue through the Leading Better Value Care program. The ACI is supporting hospitals in their existing efforts to meet the Australian Commission on Safety and Quality in Health Care. *Hip Fracture Care Clinical Care Standard*.[3] This standard outlines the care that should be available to patients with a suspected hip fracture from emergency department presentation through to completion of treatment in hospital.

Read more about hip fracture care including up to date information and what is happening in this space.

Implementation science resources

Implementation science is the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices (interventions, programs, innovations) into routine practice and improve the quality and effectiveness of health services and care.

Further information about implementation science, including frameworks, can be found at the following links. You might find these helpful when starting to implement your hip fracture project:

Sax Institute's Translational Research Framework

Sydney Health Partners Implementation Science

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Appendix 1

Fascia iliaca block emergency department audit tool (minimum data set)

MRN	**Age** (years)	**Gender** Male ☐ Female ☐ Identify as	
Date of ED presentation (transfers)		1. ED arrival time 2. ED arrival time	
Date of ED discharge		1. ED departure time 2. ED departure time	
Total length of stay in ED (hours: mins)			
Prehospital analgesia administered	Type	Amount (total)	
Did the patient have a diagnosis of cognitive impairment e.g. dementia, or delirium, on admission to hospital?	Yes ☐ No ☐	Was the patient confused, on admission to hospital?	Yes ☐ No ☐
Pain score on arrival to ED##	Rest (R)	Pain assessment tool used	
	Movement (M)		
Analgesia given prior to FIB (including ambulance)	Type	Amount	
FIB insertion Yes ☐ No ☐	No accredited staff Patient contraindications • Anticoagulants • Not consenting • Other	**FIB inserted** With catheter ☐ Without catheter ☐	
		FIB insertion date and time (24 hours) Date Time	
Clinician inserting FIB	Medical ☐	Nursing ☐	
	Designation	Designation	

Pain score post FIB insertion	Pain score 1-hour post FIB ##	Reduction in pain score (difference between pre and post FIB score) i.e. scores at ##
	Rest (R)	
	Movement (M)	
	Pain score 4-hour post FIB (if still in ED)	Reduction in pain score (difference between pre and post FIB score)*
	Rest (R)	
	Movement (M)	

Adverse event post FIB insertion	Yes ☐	No ☐
	☐ Circumoral tingling	
	☐ Light headed	
	☐ Arrhythmia	
	☐ Seizure	
	☐ Nerve damage	
	Other	

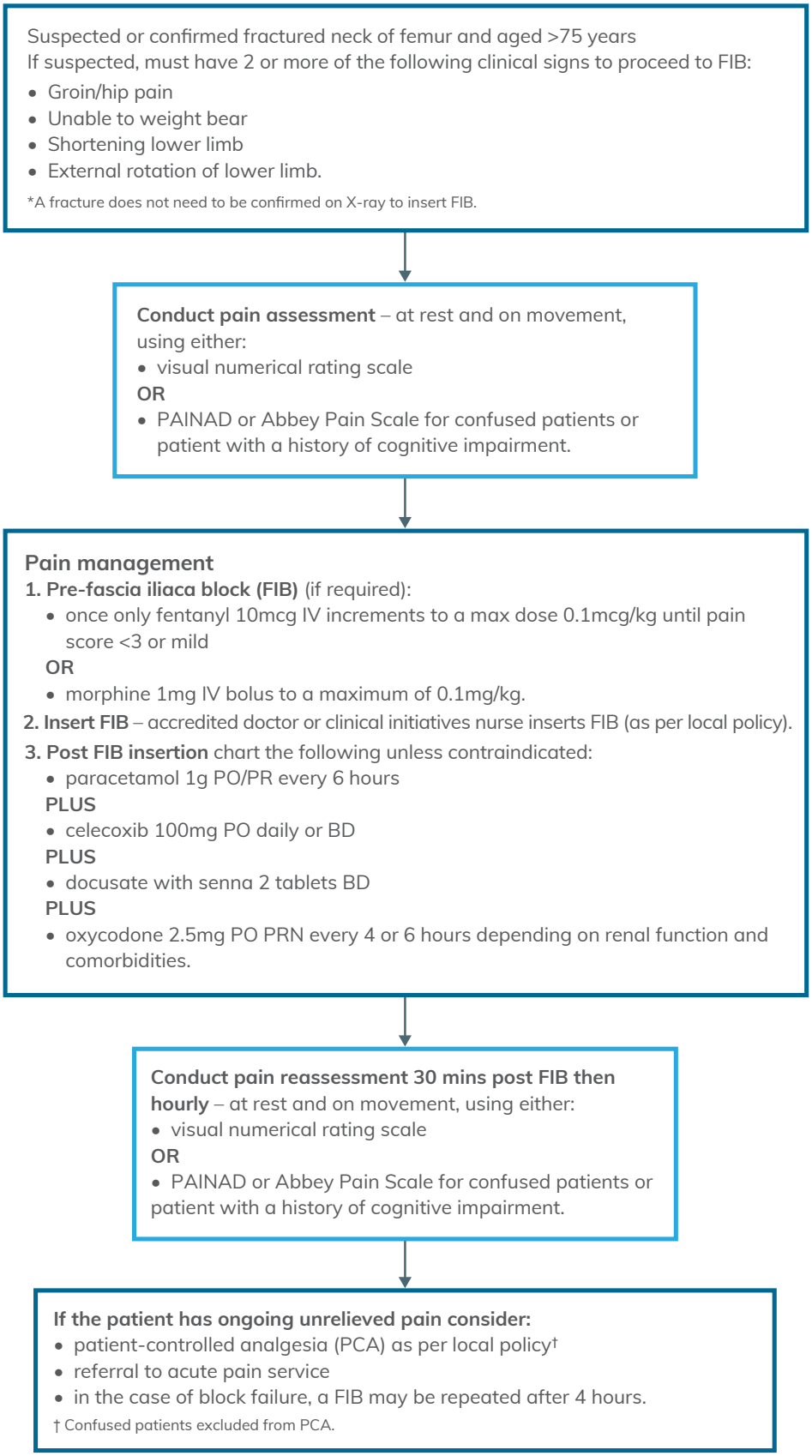
ED supplemental analgesia received post FIB	Type	Amount (total amount in ED)

Referral to acute pain service (if available)	Yes ☐	No ☐	Not applicable ☐

* 30% reduction in pain score considered significant.

Appendix 2

Emergency department elderly trauma pain guideline: fractured neck of femur



Appendix 3

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Fascia iliaca block

Clinician's logbook

This logbook is to be completed by clinicians intending to be assessed in the insertion of fascia iliaca blocks. Clinicians should retain this logbook to ensure appropriate recognition of prior learning and attach evidence of successful completion of the knowledge component.

Name	
Designation	

Date	Insertion	Complications / comments / key learnings	Supervisor name, signature and designation

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Fascia iliaca Block - Clinician's logbook

Date completed:

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Appendix 4

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Fascia iliaca block

Clinical competency assessment tool

Clinical outcome

The clinician provides safe and effective care to patients with acute hip fracture requiring fascia iliaca block (FIB) by demonstrating thorough patient assessment (including indications and contraindications to FIB), successful FIB insertion, education to family and/or carer, post FIB management and appropriate documentation.

Name	
Date	
Department or unit	

The participant acknowledges they are ready for observation of practice and has completed all preparation including, read and understood relevant policy and/or protocols and completed associated learning packages, pathways and workshops as outlined on My Health Learning.

(Participant's signature)

The assessor must be a FIB accredited clinical nurse consultant, registrar or consultant

Element	Performance criteria	Competent	Not yet competent
1. **Demonstrates an understanding of the general principles for performing a FIB**	The competency is undertaken maintaining knowledge and understanding of: 1.1 Local FIB policy and procedures 1.2 Work health and safety principles and safe work practices 1.3 The five moments of hand hygiene and principles of asepsis 1.4 Infection prevention policies 1.5 Waste management policies 1.6 Appropriate use of personal protective equipment relevant to risk 1.7 Patient identification policy and protocol 1.8 Patients' rights and privacy e.g. informed consent, appropriate explanation and consideration of social, cultural and emotional factors	☐	☐
2. **Demonstrates an understanding of the fundamental principles for preprocedure of FIB preparation**	2.1 Discusses FIB with patient and family and carer, obtains verbal consent and provides written information on procedure 2.2 Explains risk of procedure to patient and addresses any concerns or questions 2.3 Describes indications for FIBs 2.4 Discusses the contraindications for FIBs 2.5 Outlines the indications and rationale for monitoring during insertion of FIBs 2.6 Ensures peripheral intravenous catheter inserted andintravenous therapy commenced 2.7 Discusses signs and treatment of the following complications: 2.7.1 inadvertent intravascular injection 2.7.2 local anaesthetic toxicity 2.7.3 resistance to injection 2.7.4 inferior run off of local solution 2.7.5 reaction to local anesthetic 2.8 Prepares equipment, maintaining aseptic technique, including priming FIB needle and drawing up local anaesthetic 2.9 Positions the patient appropriately to maintain comfort as much as possible 2.10 Describes dose, contraindications, and monitoring requirements for ropivacaine 2.11 Positions the patient appropriately to maintain comfort as much as possible	☐	☐

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Fascia iliaca block - clinical competency assessment tool

Element	Performance criteria		Competent	Not yet competent
3. Demonstrates an understanding of the fundamental principles for conducting the FIB procedure	3.1	Demonstrates knowledge of anatomy and physiology of the lower limb nervous system	☐	☐
	3.2	Cleans the area with chlorhexidine gluconate swab		
	3.3	Prepares ultrasound - linear probe (transducer). Sets the ultrasound probe (transducer) to nerve examination setting, set depth to 4-5cm (depending on the size of the patient)		
	3.4	Identifies the following structures on ultrasound: - anterior superior iliac spine - femoral artery and vein - ischium - iliacus muscle - inguinal ligament - fascia lata - fascia iliaca		
	3.5	Demonstrates out-of-plane technique for insertion of FIB and understanding of limitations of in-plane technique		
	3.6	Decreases ultrasound depth to 2-3cm		
	3.7	Inserts 3-5mL local anaesthetic subcutaneously at site of FIB insertion		
	3.8	Inserts FIB needle and visualises tip of needle puncturing the fascia lata and fascia iliaca		
	3.9	Demonstrates correct use of needle and kit used, including spread of local anaesthetic deep to the fascia iliaca using ultrasound		
	3.10	Continues to inject the remainder of the ropivacaine observing spread of local anaesthetic under ultrasound throughout whole procedure		
	3.11	Withdraws needle and applies light pressure to the injection site		
	3.12	Legibly completes documentation with the required information and hands over in a timely, accurate manner		
4. Performs FIB post insertion assessment. **Displays ability to problem solve and apply critical thinking skills.**	4.1	Discusses post-procedure care including site care, ongoing pain assessment, monitoring requirements and documentation	☐	☐
	4.2	Demonstrates knowledge of the complications that can arise from FIB post insertion including clinical signs for each of the following: - haematoma - failed block - nerve damage - toxicity - injection into major vessel - infection		
	4.3	Discusses the process if FIB is unsuccessful		
	4.4	Provides any relevant post-procedure instructions to staff caring for patient including ongoing, regular pain assessment		
	4.5	Disposes of equipment and waste appropriately		
	4.6	Ensures patient is comfortable and addresses any required needs before leaving the patient area		
	4.7	Describes the process for escalation if concerns with patient condition, and identifies when interdisciplinary team referral is indicated		

Fascia iliaca block - clinical competency assessment tool

Assessment decision

FIB procedure	Competent ☐	Not yet competent ☐	Not assessed ☐
Action or further training required			
Details of feedback to candidate			
Details of feedback from candidate			

Supervisor's name		Designation	
Signature		Date	

Candidate's name		Designation	
Signature		Date	

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Glossary

ACI	Agency for Clinical Innovation
ED	Emergency department
GP	General practitioner
CIN	Clinical initiatives nurse
CNC	Clinical nurse consultant
FIB	Fascia iliaca block
FACEM	Fellowship of the Australasian College for Emergency Medicine
GP	General practitioner
LHD	Local health district
MRN	Medical record number
NSW	New South Wales
PAINAD	Pain Assessment in Advanced Dementia Scale
PRN	When necessary (lit. pro re nata)
VMO	Visiting medical officer
VNRS	Verbal Numerical Rating Scale

Definitions

Fascia iliaca block (FIB)	A regional anaesthetic technique that blocks sensation in the distribution of the femoral and lateral femoral cutaneous nerves.
Traumatic injury	An injury to the body that occurs when a physical force contacts the body.
Suspected acute hip fracture	On examination, the affected extremity is often shortened and unnaturally, externally rotated compared to the unaffected leg. The patient is experiencing pain and is unable to weight bear.
Confirmed acute hip fracture	On examination, the affected extremity is often shortened and unnaturally, externally rotated compared to the unaffected leg, plus medical confirmation by either X-ray, magnetic resonance imaging (MRI) or computed tomography (CT).
In-plane approach	The needle is placed in line and parallel to the transducer (ultrasound beam). Both needle shaft and tip are visualised.
Out-of-plane	The needle is orientated perpendicular to the transducer, the needle tip is visualised as a hyperechoic dot and followed as it progresses to the target by fanning of sliding the ultrasound probe.
Failed block	Verbal Numerical Rating Scale (VNRS), Abbey Pain Scale or the Pain Assessment in Advanced Dementia Scale (PAINAD) are not decreased by 30% within one hour of FIB insertion.
Novice FIB clinician	Medical or nursing clinician who is authorised to insert FIB and is new to this procedure.
Supervisor	FIB practitioner deemed competent.

Acknowledgements

The ACI acknowledges the work of the St Vincent's Hospital Emergency Department, Acute and Chronic Pain Services, Department of Pain Medicine, Pain in the Elderly Working Group, in adapting *Guidelines for insertion of fascia iliaca compartment block*, for preoperative management in adults with confirmed or suspected fractured neck of femur.

Fascia Iliaca Block members 2020

FIB Acute Hip Fracture in the Older Person Steering Group committee members 2020

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Hip Fracture FIB Working Group 2020

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The ACI's clinical networks, institutes and taskforces are chaired by senior clinicians and consumers who have a keen interest and track record in innovative clinical care.

We also work closely with the Ministry of Health and the four other pillars of NSW Health to pilot, scale and spread solutions to healthcare system-wide challenges. We seek to improve the care and outcomes for patients by re-designing and transforming the NSW public health system.

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