Worcestershire Acute Hospitals NHS Trust

GUIDELINE & PROCEDURE FOR THE INJECTION OF LOCAL ANAESTHETIC BY PERIOPERATIVE SPECIALIST PRACTITIONERS (PSP)

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

For minor operations on the skin and superficial structures a local anaesthetic has many advantages. It is the least toxic of all anaesthetics and has no long-term after effects, so the patient can resume full activity immediately afterwards. Infiltration anaesthesia aims at paralysing the nerve endings at the actual site of operation. Field block requires the solution to be injected at some distance from the actual site of operation, so a zone of anaesthesia is created surrounding the operation area.

The patients covered by this guideline are patients selected by admitting consultant as suitable to undergo minor surgical procedures under local anaesthetic by PSP; Excision of sebaceous cyst, lipoma, papilloma, naevus.

The patients not covered by this guideline are children and patients requiring minor surgical lesion excision to the face or neck

This guideline is for use by the following staff groups:

Perioperative Specialist Practitioners

Lead Clinician(s)

Mr N Purser	Consultant Surgeon Trust wide
Mr J Taylor	Consultant Surgeon Trust wide
Guideline reviewed and approved by Accountable Director on:	18th September 2024
Review Date: This is the most current document and is to be used until a revised version is available	18th September 2027

Key amendments to this guideline

Date	Amendment	By:
March 2005	Guideline approved by Clinical effectiveness committee	
June 2008	Guideline reviewed by clinical leads	
July 2008	Guideline approved by Medicines safety committee	
April 2012	No changes made, expiry extended for a period of 2 years.	W Rutherford
May 2014	Guideline reviewed with no amendments made to content	S.Milllett/N.Purser N.Hickey/W.Rutherford
August 2016	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
August 2017	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
June 2018	Document extended for 3 months as per TLG recommendation	TLG
August 2019	Document reviewed with no changes to document	Sally Millett/Wayne Rutherford
March 2023	Document extended for 6 months while under review	Andrew Fryer
November 23	Document extended for 3 months whilst under review	Dr Hutchinson
July 2024	Document reviewed and amended to reflect staff turnover	Mr J Taylor/Mr N/Purser/Dr J Hutchinson
September 2024	Document reviewed and approved in Breast Governance meeting 09.09.24 and Theatres Governance meeting 18.09.24	Mr J Taylor Dr J Hutchinson

GUIDELINE FOR THE INJECTION OF LOCAL ANAESTHETIC BY PERIOPERATIVE SPECIALIST PRACTITIONERS

Introduction

For minor operations on the skin and superficial structures a local anaesthetic has many advantages. It is the least toxic of all anaesthetics and has no after-effects, so the patient can resume full activity immediately afterwards. Infiltration anaesthesia aims at paralysing the nerve endings at the actual site of operation. Field block requires the solution to be injected at some distance from the actual site of operation, so a zone of anaesthesia is created surrounding the operation area.

Types of local anaesthetics

Several types of local anaesthetics are available, with slightly different durations of anaesthetic effect and potential toxicity. These include

- topical anaesthetics e.g. Emla & Ametop
- injectable anaesthetics. i.e. Lidocaine (lignocaine) and Bupivacaine with epinephrine (adrenaline) injection.

See ID 732 Protocol and Training Programme and local anaesthetic PGDs/Protocols

IMPORTANT - The National Patient Safety Agency has highlighted the risk of selecting a local anaesthetic medicine instead of one for intravenous administration. Ampoules/vials containing local anaesthetic should be stored in a separate cupboard from intravenous medicines.

Competencies Required

- The PSP will have achieved competency, demonstrated by training and assessment by consultant mentors and supported by documentation
- Be able to describe the action of local anaesthetic agents
- Outline the contra indications for local anaesthetics

Guideline

Planning

- Check patient details, including allergies, sensitivities and potential interactions. See appendix.
- Explain Procedure to obtain consent
- Ensure a safe and comfortable environment for patient and staff.
- Ensure familiarity with AAGBI Management of Local Anaesthetic Toxicity guidance
- Calculate maximum dose to be injected (see Appendix)

Equipment

- Antiseptic or alcohol for skin disinfection
- 25g and 22g needles
- 10 ml syringe
- Gloves

Assessment

Action	Rationale
Ensure operating theatre ready to accept patient before sending	Ensure a safe environment
Identify Patient and confirm with operating list	Identification of correct patient
Wash hands and put on sterile gloves	Reduce risk if infection
Clean operative site with 70 % alcohol impregnated wipe in a spiral motion	Reduce infection risk
Check vial of Local Anaesthetic to be injected	Ensure correct drug is selected and within expiry date
Wipe the top of the vial with a similar wipe	Reduce infection risk
Use new needle for injection	Patient comfort
The narrowest gauged needle possible should be used	Reduce patient discomfort
Stretch the skin over the area to be injected then puncture the skin perpendicularly.	Reduce patient discomfort
Slowly depress the plunger,	Reduce patient discomfort
Administer the injection by bolus or peppering	
Withdraw the plunger each time needle position is altered	To ensure the needle is not in a blood vessel
Withdraw the needle and discard into a sharp container immediately	Reduce risk of needle stick injury
Observe patient during and after the procedure	Assess for post injection adverse reaction

Appendix 1. Management of Local Anaesthetic Toxicity. Taken from AAGBI Quick Reference Handbook (June 2023)

3-10 Local anaesthetic toxicity v.2

Signs of severe toxicity:
- Sudden alteration in mental status, severe agitation or loss of consciousness, with or without tonic-clonic convulsions.
- Cardiovascular collapse: sinus bradycardia, conduction blocks, asystole and ventricular tachyarrhythmias may all occur.
- Local anaesthetic toxicity may occur some time after an initial injection.

START

1. Stop injecting the local anaesthetic (remember infusion pumps).
2. Call for help and inform immediate clinical team of problem.
3. Call for cardiac arrest trolley and lipid rescue pack.
4. Give 100% oxygen and ensure adequate lung ventilation:
   - Maintain the airway and if necessary secure it with a tracheal tube.
   - Avoid hypercarbia – consider mild hyperventilation.
5. Confirm or establish intravenous access.
6. **If circulatory arrest:**
   - Start continuous CPR using standard protocols (→ **2-1**) **but:**
   - **Give** intravenous lipid emulsion (Box A).
   - **Use smaller adrenaline dose** (≤ **1µg.kg**$^{-1}$ instead of 1 mg)
   - Avoid vasopressin.
   - Recovery may take >1 hour.
   - Consider the use of cardiopulmonary bypass if available.

   If no circulatory arrest:
   - Conventional therapies to treat hypotension, brady- and tachyarrhythmia.
   - **Consider** intravenous lipid emulsion (Box A).
7. Control seizures:
   - Small incremental dose of benzodiazepine is drug of choice.
   - Thiopental or propofol can be used, but beware negative inotropic effect.
   - Consider neuromuscular blockade if seizures cannot be controlled.

Box A: LIPID EMULSION REGIME

USE 20% Intralipid® (propofol is not a suitable substitute)

Immediately
- Give an initial i.v. bolus of lipid emulsion 1.5 ml.kg^{-1} over 2-3 min (~100 ml for a 70 kg adult)
- Start an i.v. infusion of lipid emulsion at 15 ml.kg^{-1}.h^{-1} (17.5 ml.min^{-1} for a 70 kg adult)

At 5 and 10 minutes:
- Give a repeat bolus (same dose) if:
  - cardiovascular stability has not been restored or
  - an adequate circulation deteriorates

At any time after 5 minutes:
- Double the rate to 30 ml.kg^{-1}.h^{-1} if:
  - cardiovascular stability has not been restored or
  - an adequate circulation deteriorates

Do not exceed maximum cumulative dose 12 ml.kg^{-1} (70 kg: 840 ml)

Box B: CRITICAL CHANGES

Cardiac arrest → Check already done 1 to 5, then → 6

Box C: AFTER THE EVENT

Arrange safe transfer to appropriate clinical area
Exclude pancreatitis: regular clinical review, daily amylase or lipase
Report case on your local critical incident system and to the relevant national system (these vary between each devolved nation and in Ireland)

3-10

Appendix 2. Recommended Local Anaesthetic doses.

Drug	Concentration (mg/ml)	Maximum dose (mg/kg)	Maximum volume (ml)								
			35 kg	40 kg	45 kg	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg
(Levo)**Bu**pivacaine **0.25%**	2.5 mg/ml	2 mg/kg	28	32	36	40	48	56	60ml (150mg)		
(Levo)**Bu**pivacaine **0.5%**	5 mg/ml		14	16	18	20	24	28	30ml (150mg)		
(Levo)**Bu**pivacaine **0.75%**	7.5 mg/ml		9.3	10.6	12	13	16	18	20ml (150mg)		
Bupivacaine **0.25%** *with Adrenaline (1:200000)*	2.5 mg/ml	2 mg/kg	28	32	36	40	48	56	60ml (150mg)		
Bupivacaine **0.5%** *with Adrenaline (1:200000)*	5 mg/ml		14	16	18	20	24	28	30ml (150mg)		
Ropivacaine **0.2%**	2 mg/ml	3 mg/kg	52.5	60	67.5	75	90	105	120	135	150
Ropivacaine **0.75%**	7.5 mg/ml		14	16	18	20	24	28	32	36	40
Ropivacaine **1%**	10 mg/ml		10.5	12	13.5	15	18	21	24	27	30

Drug	Concentration (mg/ml)	Maximum dose (mg/kg)	Maximum volume (ml)								
			35 kg	40 kg	45 kg	50 kg	60 kg	70 kg	80 kg	90 kg	100 kg
Lidocaine **1%**	10 mg/ml	3 mg/kg	10.5	12	13.5	15	18	20ml (200mg)			
Lidocaine **2%**	20 mg/ml		5.25	6	6.75	7.5	9	10ml (200mg)			
Lidocaine **1%** *with Adrenaline (1:200000)*	10 mg/ml	7 mg/kg	24.5	28	31.5	35	42	49	50ml (500mg)		
Lidocaine **2%** *with Adrenaline (1:200000)*	20 mg/ml		12.25	14	15.75	17.5	21	24.5	25ml (500mg)		
Prilocaine **1%**	10 mg/ml	6 mg/kg	21	24	27	30	36	40ml (400mg)			

References

- RF Rintoul (1995) *Farquharson's Textbook of Operative Surgery (8th edn.)* Churchill Livingstone

- *A clinical guideline for the use of injection therapy by physiotherapists.* (1999) Association of chartered physiotherapists in orthopaedic medicine

Contribution List

Key individuals involved in developing the document

Name	Designation
Frances Breakwell	Peri-operative Specialist Practitioner KTC
Wayne Rutherford	Peri-operative Specialist Practitioner KTC
Dr Sally Millett	Consultant Anaesthetist WRH
Mr Michael Corlett	Consultant General Surgeon WRH
Mr Nicholas Purser	Consultant General Surgeon ALEX

Circulated to the following individuals for comments

Name	Designation
Alison Smith	Principal Pharmacist Medicines Safety

Circulated to the following CD's/Heads of dept for comments from their directorates / departments

Name	Directorate / Department
Mr Nicholas Purser	Director of Surgery
Rachel Overfield	Director of Nursing
Paul Benham	Medicines Safety Committee

Supporting Document 1 - Equality Impact Assessment Tool

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	×	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
	Mr Jevan Taylor	**Consultant**	**jevan.taylor1@nhs.net**
	Mr Nicholas Purser	**Consultant**	**nicholaspurser@nhs.net**
Date assessment completed	**26th September 2024**		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title: GUIDELINE & PROCEDURE FOR THE INJECTION OF LOCAL ANAESTHETIC BY PERIOPERATIVE SPECIALIST PRACTITIONERS (PSP)**			
What is the aim, purpose and/or intended outcomes of this Activity?	To define an SOP for patients attending for excision of skin lesions using local anaesthetic injected by the Perioperative Surgical Practitioners. This should ensure safe administration of local anaesthetic by competent and trained staff.			
Who will be affected by the development & implementation of this activity?	X X ❑ ❑	Service User Patient Carers Visitors	X ❑ ❑ ❑	Staff Communities Other _____

Is this:	X Review of an existing activity ❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?
What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	Not applicable
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	Not applicable
Summary of relevant findings	Not applicable

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age	X			Patients of all ages will safely be able to undergo surgery under local anaesthetic, thus avoiding the need for a general anaesthetic or the alternative of no treatment at all.
Disability	X			Patients, whether able-bodied or not, will safely be able to undergo surgery under local anaesthetic, thus avoiding the need for a general anaesthetic or the alternative of no treatment at all.
Gender Reassignment		X		Gender has no impact on local anaesthetic administration
Marriage & Civil Partnerships		X		Marital status has no impact on local anaesthetic administration
Pregnancy & Maternity		X		Pregnancy or parity has no impact on local anaesthetic administration
Race including Traveling Communities		X		Race has no impact on local anaesthetic administration

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Religion & Belief		X		Religion has no impact on local anaesthetic administration
Sex		X		Sex has no impact on local anaesthetic administration
Sexual Orientation		X		Sexual orientation has no impact on local anaesthetic administration
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)	X			Procedures performed under local anaesthetic are associated with less morbidity and less recovery time, allowing resumption of caring responsibilities earlier than procedures under general anaesthetic
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)		X		There is no impact related to health inequalities on local anaesthetic administration

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
		.		
How will you monitor these actions?	**Not applicable**			
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)	**When the document is next reviewed**			

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation
1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.
1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	
Date signed	26.09.2024
Comments:	
Signature of person the Leader Person for this activity	
Date signed	26.09.2024
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval