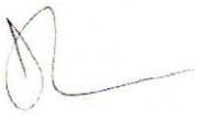
Patient Group Direction For The Administration Of Medicines Included In The Local Anaesthetic Formulary For Insertion/Removal Of Central Venous Catheters And Radial Artery Sheaths By Nurses And Radiographers Working Within NHS Grampian

Lead Author: Senior Charge Nurse, Radiology	**Consultation Group:** See relevant page in the PGD	**Approver:** Medicines Guidelines and Policies Group **Authorisation:** NHS Grampian

Signature: 		**Signature:** 

NHSG Identifier: MGPG/PGD/LidocaineCVC/1734	**Review Date:** September 2027 **Expiry Date:** September 2028	**Date Approved:** September 2025

NHS Grampian have authorised this Patient Group Direction to help individuals by providing them with more convenient access to an efficient and clearly defined service within the NHS Board. This Patient Group Direction cannot be used until Appendix 1 and 2 are completed.

Uncontrolled when printed

Version 9

Revision History:

Reference and approval date of PGD that has been adapted and/or superseded	PGD supersedes NHSG/PGD/LidocaineCVC/MGPG1320, Version 8	
Date of change	**Summary of Changes**	**Section heading**
June 2025	Review of PGD.	
October 2025	Change of product name from brand to generic Xylocaine (lidocaine) 1% with adrenaline (epinephrine) 1:200,000 solution for injection to lidocaine 1% with adrenaline (epinephrine) 1:200,000 solution for injection	Monograph
October 2025	Updated SMPC links	References
October 2025	Removal of reference to xylocaine	Throughout PGD

NHGS Identifier: MGPG/PGD/LidocaineCVC/1734
Keyword(s): PGD Patient Group Direction Lidocaine injection Nurse Local Anaesthetic Central Venous Catheter Lignocaine Radiographer

Policy Statement: It is the responsibility of the individual healthcare professionals and their line managers to ensure that they work within the terms laid down in this PGD and to ensure that staff are working to the most up to date PGD. By doing so, the quality of the services offered will be maintained, and the chances of staff making erroneous decisions which may affect individual, staff or visitor safety and comfort will be reduced. Supervisory staff at all levels must ensure that staff using this PGD act within their own level of competence.

The lead author is responsible for the review of this PGD and for ensuring the PGD is updated in line with any changes in clinical practice, relevant guidelines, or new research evidence.

Review date: The review date for a PGD needs to be decided on a case-by-case basis in the interest of safety. The expiry date should not be more than 3 years, unless a change in national policy or update is required.

Document:	Drafted:	June 2025
	Completed:	August 2025
	Approved:	September 2025 (published October 2025)
	Amended and re-authorised:	

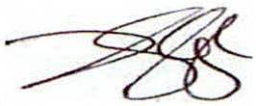
Organisational Authorisations

This PGD is not legally valid until it has had the relevant organisational authorisation.

PGD Developed/Reviewed by;

Medical practitioner	**Name:** Dr Akshay Sethi **Title:** Speciality Doctor Radiology **Contact email:** akshay.sethi@nhs.scot **Signature:** ..... **Date:** 28/10/2025
Senior representative of the professional group who will provide care under the direction	**Name:** Sumy Sunny **Title:** Senior Charge Nurse, Cardiac Cath Labs, ARI **Contact email:** sumy.sunny@nhs.scot **Signature:** ..... **Date:** 23/10/2025
Lead author	**Name:** Sheree Seddon **Title :** Senior Charge Nurse, Vascular Access, Radiology **Contact email:** sheree.seddon@nhs.scot **Signature:** ..... **Date:** 14/10/2025
Pharmacist	**Name:** Frances Ferguson **Title :** Clinical Pharmacist **Contact email:** frances.ferguson@nhs.scot **Signature:** ..... **Date:** 29/10/2025

Approved and authorised for use within NHSG by;

Medicines Guidelines and Policies Group Chair	Signature	Date Signed
Lesley Coyle		29/10/2025

Management and Monitoring of Patient Group Direction

PGD Consultative Group

The consultative group is legally required to include a medical practitioner, a pharmacist and is best practice to have a representative of the professional group who will provide care under the direction.

Name:	**Title:**
Sheree Seddon	**Lead Author:** Senior Charge Nurse, Vascular Access, Radiology
Frances Ferguson	**Pharmacist:** Clinical Pharmacist
Akshay Sethi	**Medical Practitioner:** Speciality Doctor Radiology
Sumy Sunny	**Senior Representative:** Senior Charge Nurse, Cardiac Cath Labs, ARI
Mairi Anderson	Senior Charge Nurse Radiology
Lauren Innes	Superintendent Radiographer
Sharon Jones	Radiology Unit Operational Manager
Dr Nicola Ryan	Consultant Cardiologist

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Clinical indication to which this PGD applies

Definition of situation/ Condition	This Patient Group Direction (PGD) will authorise appropriately qualified and trained nurses/radiographers working within radiology departments to administer medicines included in the Local Anaesthetic PGD Formulary for infiltration anaesthesia by subcutaneous and intramuscular injection prior to the insertion/removal of central venous catheters and radial artery sheaths to individuals aged over 16 years. This PGD should be used in conjunction with the Departmental Guidelines for Nurse/Radiographer Led Central Venous Catheter Insertion/Removal. This PGD should be used in conjunction with the recommendations in the current British National Formulary (BNF), British National Formulary for Children (BNFC), and the individual Summary of Product Characteristics (SmPC).
Inclusion criteria	Individuals aged over 16 years of age who require insertion/removal of a central venous catheter in accordance with the Departmental Guidelines for Nurse/Radiographer Led Central Venous Catheter Insertion/Removal or radial artery sheath insertion Prior to the administration of the medicine, valid consent to receiving treatment under this PGD must be obtained. Consent must be in line with current NHSG consent policy.
Exclusion criteria	• Under 16 years of age • Complete heart block • Clinical evidence of hypovolaemia • Any known hypersensitivity to local anaesthetics of the amide type, adrenaline or any of the excipients of these medicines • Infection/inflammation at the site of injection • Myasthenia Gravis • Pregnancy • Individuals for whom no valid consent has been received.
Precautions and special warnings	• If there is any concern about the appropriate use of the medicine in the specific indications given within the PGD then medical advice should be sought.

	• If there is any doubt about the correct diagnosis, medical advice should be sought. • Precautions listed in the individual medicine monographs should be taken into account. • Lidocaine should be used with caution in individuals who have conditions listed below; however it should be noted that these conditions do not exclude individuals from receiving therapy. Nurses and radiographers should exercise their professional judgement with regard to administering lidocaine. If there is any doubt as to the individual's suitability they should be discussed with a radiologist or appropriate medical professional: o epilepsy o bradycardia o impaired hepatic function o impaired renal function o congestive heart failure o impaired respiratory function o cardiac conduction disturbances .
Action if excluded from treatment	Medical advice must be sought – refer to relevant medical practitioner. Document the reason for exclusion under the PGD and any action taken in the individual's appropriate clinical records.
Action if treatment is declined	Inform/refer to the relevant medical practitioner if individual declines treatment. Document that the administration was declined, the reason and advice given in appropriate clinical records.

Description of treatment available under the PGD

Name form and strength of medicine	See individual medicine monographs.
Legal status	Lidocaine, Lidocaine with adrenaline solution for injection is a Prescription-only Medicine (POM).
Is the use out with the SmPC?	No, will not be used off-label.
Dosage/Maximum total dose	See individual medicine monographs.

Frequency of dose/Duration of treatment	Once only dose.
Maximum or minimum treatment period	N/A
Route/Method of administration	See individual medicine monographs.
Quantity to be administered	See individual medicine monographs.
Storage requirements	See individual medicine monographs.
Additional Information	N/A
Follow-up (if applicable)	Individuals should not leave if they are feeling unwell without speaking to the healthcare professional who administered the medicine first. If necessary a doctor or the individuals GP should be contacted for advice.
Advice (Verbal)	• Advise individual what to expect and of the possible side effects and their management. • The individual should be made aware that there may be initial stinging, transient local swelling and erythema associated with the injection followed by a loss of sensation which may last for 30 to 60 minutes. There may be a continued sensitivity and awareness of touch/pressure at the injection site. • If serious adverse or persistent effects occur, the individual/parent/carer should be advised to contact their GP/Accident and Emergency department/NHS24. • Individuals/carers should be advised to report suspected adverse reactions to the Medicines and Healthcare products Regulatory Agency (MHRA) using the Yellow Card reporting scheme.
Advice (Written)	The Patient Information Leaflet (PIL) contained in the medicine(s) should be made available to the individual. Where this is unavailable, or unsuitable, sufficient information should be given in a language that they can understand.
Identifying and managing possible adverse reactions	See individual medicine monographs.

	This list is not exhaustive. Please also refer to current BNF and manufacturers SmPC for details of all potential adverse reactions. **BNF**: BNF British National Formulary - NICE BNF for Children British National Formulary - NICE **SmPC/PIL/Risk Minimisation Material:** Home - electronic medicines compendium (emc) MHRA Products | Home RMM Directory - (emc) If an adverse reaction does occur give immediate treatment and inform relevant medical practitioner as soon as possible. Document in accordance with locally agreed procedures in the individual's record. Report any suspected adverse reactions using the Yellow Card System. Yellow Card Scheme - MHRA
Facilities and supplies required	• The following are to be available at sites where the medicine is to be administered: • Appropriate storage facilities • An acceptable level of privacy to respect individual's right to confidentiality and safety • Basic airway resuscitation equipment (e.g. bag valve mask) • Immediate access to Epinephrine (Adrenaline) 1 in 1000 injection • Access to a working telephone • Another competent adult, who can summon urgent emergency support if required should ideally be present • Access to medical support (this may be via the telephone) • Approved equipment for the disposal of used materials • Clean and tidy work areas, including access to hand washing facilities or alcohol hand gel • A copy of this current PGD in print or electronically.

Characteristics of staff authorised to administer medicine(s) under PGD

Professional qualifications	Registered nurses as recognised by the Nursing and Midwifery Council (NMC), and Registered Radiographers as recognised by the Health and Care Professions Council (HCPC).

Specialist competencies	**Approved by the organisation as:** • Competent to assess the individual's capacity to understand the nature and purpose of the medicine administration in order to give or refuse consent • Aware of current treatment recommendations and be competent to discuss issues about the medicine with the individual • Having undertaken appropriate training to carry out clinical assessment of individuals identifying that treatment is required according to the indications listed in the PGD • Competent to undertake administration of the medicine • Competent in the recognition and management of anaphylaxis or under the supervision of persons able to respond appropriately to immediate adverse reactions • Competent to work under this PGD and authorised by name as an approved person to work under the terms of the PGD.
Ongoing training and competency	**All professionals working under this PGD must:** • Have undertaken NoS PGD module training on TURAS Learn • Have attended basic life support training either face to face or online and updated in-line with Board requirements • Have undertaken NHS e-anaphylaxis training or equivalent which covers all aspects of the identification and management of anaphylaxis in-line with Board requirements • Maintain their skills, knowledge and their own professional level of competence in this area according to their individual Code of Professional Conduct. **Note:** All practitioners operating under the PGD are responsible for ensuring they remain up to date with the use of the medicine. If any training needs are identified these should be discussed with those responsible for authorisation to act under the PGD • Have knowledge and familiarity of the following; ○ SmPC for the medicine(s) to be administered in accordance with this PGD.
Responsibilities of professional manager(s)	**Professional manager(s) will be responsible for;** Ensuring that the current PGD is available to all staff providing care under this direction. Ensuring that staff have received adequate training in all areas relevant to this PGD and meet the requirements above. Maintain up to date record of all staff authorised to administer the medicine(s) specified in this direction.

Documentation

Authorisation of administration	Nurses working within NHS Grampian can be authorised to administer the medicine(s) specified in this PGD by their Nurse Manager/Consultant. Radiographers working within NHS Grampian can be authorised to administer the medicine(s) specified in this PGD by their Radiography Manager or Consultant Radiologist. All authorised staff are required to read the PGD and sign the Agreement to Administer Medicines Under PGD (Appendix 1). A Certificate of Authorisation (Appendix 2) signed by the authorising professional/manager should be supplied. This should be held in the individual health professional's records, or as agreed locally.
Record of administration	An electronic or paper record must be completed to allow audit of practice. An electronic/HEPMA record of the screening and subsequent administration, or not of the medicine(s) specified in this PGD should be made in accordance with individual Health Board electronic/HEPMA recording processes. If a paper record is used for recording the screening of individuals and the subsequent administration, or not of the medicine(s) specified in this PGD. This should include as a minimum: • Date and time of administration • Individuals name and CHI • Exclusion criteria, record why the medicine was not administered (if applicable) • Record that valid consent to treatment under this PGD was obtained • The name, dose, form, route (batch number, expiry date and anatomical site where appropriate for injectable medicines) of the medicine(s) administered • Advice given, including advice given if excluded or declined treatment under this PGD • Signature and name in capital letters of the healthcare professional who administered the medicine, and who undertook the assessment of the individual's clinical suitability for the administration/supply of the medicine • Record of any adverse effects and the actions taken (advise individuals' GP/relevant medical practitioner).

	Depending on the clinical setting where administration is undertaken, the information should be recorded manually or electronically, in one (or more) of the following systems, as appropriate: • Electronic Patient record (EPR) • Secondary Care Medical Notes • HEPMA • Individual service specific systems. Local policy should be followed with respect to sharing information with the individual's General Practitioner. All records should be clear, legible and contemporaneous and in an easily retrievable format.
Audit	All records of the medicine(s) specified in this PGD will be filed with the normal records of medicines in each practice/service. A designated person within each practice/service where the PGD will be used will be responsible for annual audit to ensure a system of recording medicines administered under a PGD.
References	Electronic Medicines Compendium http://www.medicines.org.uk Lidocaine Hydrochloride Injection BP 1% (Hameln Pharma Ltd)) - Date of revision of text 14/02/22, accessed 28/10/25 Lidocaine 1% with Adrenaline (Aspen) - Date of revision of text 07/05/23, accessed 28/10/25. Lidocaine Hydrochloride Injection BP 2% (Hamlyn Pharma Ltd) – Date of revision of text 15/02/22, accessed 28/10/25. British National Formulary https://www.bnf.org/products/bnf-online/ accessed 05/08/25.

Appendix 1

Healthcare Professional Agreement to Administer Medicine(s) Under Patient Group Direction

I: _____ (Insert name)

Working within: _____ e.g. Area, Practice

Agree to administer the medicine(s) contained within the following Patient Group Direction:

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I have completed the appropriate training to my professional standards enabling me to administer the medicine(s) under the above direction. I agree not to act beyond my professional competence, nor out with the recommendations of the direction.

Signed: _____

Print Name: _____

Date: _____

Profession: _____

Professional Registration number/PIN: _____

Appendix 2

Healthcare Professionals Authorisation to Administer Medicine(s) Under Patient Group Direction

The Lead manager/Professional of each clinical area is responsible for maintaining records of all clinical areas where this PGD is in use, and to whom it has been disseminated.
The Senior Nurse/Professional who approves a healthcare professional to administer the medicine(s) under this PGD is responsible for ensuring that they are competent, qualified and trained to do so, and for maintaining an up-to-date record of such approved persons.
The Healthcare Professional that is approved to administer the medicine(s) under this PGD is responsible for ensuring that they understand and are qualified, trained and competent to undertake the duties required. The approved person is also responsible for ensuring that administration is carried out within the terms of the direction, and according to their individual code of professional practice and conduct.
Patient Group Direction For The Administration Of Medicines Included In The Local Anaesthetic Formulary For Insertion/Removal Of Central Venous Catheters And Radial Artery Sheaths By Nurses And Radiographers Working Within NHS Grampian, Version 9
Local clinical area(s) where the listed healthcare professionals will operate under this PGD:

Name of Healthcare Professional	Signature	Date	Name of Manager	Signature	Date

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Name of Healthcare Professional	**Signature**	**Date**	**Name of Manager**	**Signature**	**Date**

NHS Grampian Local Anaesthetic PGD Formulary

The information in these monographs is not exhaustive. They must be read in conjunction with the current issue of the British National Formulary and the Summary of Product Characteristics for each product

Lidocaine Hydrochloride 1% W/V Solution For Injection (2mL, 5mL, 10mL And 20mL Ampoules) (Administer)	
Drug Legal Status	POM
Indication	For infiltration anaesthesia by subcutaneous and intramuscular injection prior to the insertion/removal of central venous catheters.
Inclusion Criteria	As per criteria listed in main PGD.
Exclusion Criteria	As per criteria listed in main PGD.
Dose/Total dose	• Single doses of lidocaine (for anaesthesia other than spinal) should not exceed 4.5mg/kg (200mg). • Injected subcutaneously in approximately 3mL increments. **The lowest possible concentration and volume should always be used.** **Maximum of 20mL (200mg) only allowed under this PGD.**
Frequency of dose/Duration of treatment	Single treatment.
Route/Method of Administration	• Lidocaine hydrochloride 1% injection is injected subcutaneously in approximately 3mL increments (maximum of 20mL) along the planned line of the central venous catheter and overlying the vein to be punctured. • The needle should be inserted subcutaneously and lidocaine hydrochloride 1% injection injected slowly, allowing 60 seconds for the injection to take effect. • Each injection of lidocaine hydrochloride 1% injection **must be preceded by aspiration** to ensure needle is not intravascular. • Where lidocaine hydrochloride 1% injection is to be infiltrated intramuscularly, for example subclavian punctures, the needle must be visualised using ultrasound to ensure the needle is not intravascular. • Where infiltration anaesthetic is required for central venous catheter removal, lidocaine hydrochloride 1% injection is injected subcutaneously in approximately 3mL increments at catheter exit site, taking care not to puncture catheter.

Lidocaine Hydrochloride 1% W/V Solution For Injection (2mL, 5mL, 10mL And 20mL Ampoules) (Administer)	
Quantity to be administered	Injected subcutaneously in approximately 3mL increments to a maximum of 20mL (200mg).
Potential Adverse Reactions	Adverse effects are rare and usually the result of excessively high blood concentration due to inadvertent intravascular injection, excessive dosage, rapid absorption or occasionally due to hypersensitivity. Side effects include hypersensitivity reactions, tremor, nervousness, dizziness, confusion, respiratory depression, convulsions, hypotension and bradycardia. System toxicity reactions can occur and the first symptoms of toxicity are usually, circumoral paresthesia, numbness of the tongue, light-headedness, hyperacusis, tinnitus and visual disturbances. See SmPC for further details. Nurses and radiographers must be aware of the risks, signs and symptoms as well as the treatment for acute systemic toxicity.
Follow up (If applicable)	Individuals should not leave if they are feeling unwell without speaking to the nurse or radiographer first. If necessary, a radiologist should be contacted for advice.
Storage	Store in a locked cupboard below 25°C, protected from light.

Lidocaine Hydrochloride 2% W/V Solution For Injection (2mL, 5mL,10mL and 20mL Ampoules) (Administer)	
Drug Legal Status	POM
Indication	For infiltration anaesthesia by subcutaneous and intramuscular injection prior to the insertion of a radial arterial sheath.
Inclusion Criteria	As per criteria listed in main PGD.
Exclusion Criteria	As per criteria listed in main PGD.
Dose/Total dose	• Single doses of lidocaine (for anaesthesia other than spinal) should not exceed 5mL (100mg). • Injected subcutaneously in approximately 1mL increments. **The lowest possible concentration and volume should always be used.** **Maximum of 5mL (100mg) only allowed under this PGD.**
Frequency of dose/Duration of treatment	Single treatment.
Route/Method of Administration	Lidocaine hydrochloride 2% injection is injected subcutaneously in approximately 1mL increments (maximum of 5mL) overlying the artery to be punctured. The needle should be inserted subcutaneously and lidocaine hydrochloride 2% injection injected slowly, allowing 60 seconds for the injection to take effect. Each injection of lidocaine hydrochloride 2% injection **must be preceded by aspiration** to ensure needle is not intravascular.
Quantity to be administered	Injected subcutaneously in approximately 1mL increments to a maximum of 5mL (100mg).

Lidocaine Hydrochloride 2% W/V Solution For Injection (2mL, 5mL,10mL and 20mL Ampoules) (Administer)	
Potential Adverse Reactions	Adverse effects are rare and usually the result of excessively high blood concentration due to inadvertent intravascular injection, excessive dosage, rapid absorption or occasionally due to hypersensitivity. Side effects include hypersensitivity reactions, tremor, nervousness, dizziness, confusion, respiratory depression, convulsions, hypotension and bradycardia. System toxicity reactions can occur and the first symptoms of toxicity are usually, circumoral paraesthesia, numbness of the tongue, light-headedness, hyperacusis, tinnitus and visual disturbances. See SmPC for further details. Nurses and radiographers must be aware of the risks, signs and symptoms as well as the treatment for acute systemic toxicity.
Follow up (If applicable)	Individuals should not leave if they are feeling unwell without speaking to the nurse or radiographer first. If necessary a radiologist should be contacted for advice.
Storage	Store in a locked cupboard below 25°C, protected from light.

Lidocaine 1% With Adrenaline (Epinephrine) 1:200,000 W/V Solution For Injection (20mL) (Administer)	
Drug Legal Status	POM
Indication	For infiltration anaesthesia by subcutaneous and intramuscular injection prior to the insertion/removal of central venous catheters.
Inclusion Criteria	As per criteria listed in main PGD.
Exclusion Criteria	As per criteria listed in main PGD.
Dose/Total dose	Each 1mL of solution for injection contains lidocaine hydrochloride monohydrate Ph. Eur., equivalent to 10mg of lidocaine hydrochloride anhydrous (200mg per 20mL vial), 5micrograms of adrenaline (epinephrine) as the acid tartrate (100micrograms per 20mL vial). • Single doses of lidocaine 1% with adrenaline 1:200,000 should not exceed 40mL (400mg lidocaine) • Injected subcutaneously in approximately 3mL increments. **The lowest possible concentration and volume should always be used.** **Maximum of 40mL of lidocaine 1% with adrenaline 1:200,000 only allowed under this PGD.**
Frequency of dose/Duration of treatment	Single treatment.
Route/Method of Administration	Lidocaine 1% with adrenaline 1:200,000 injection is injected subcutaneously in approximately 3mL increments (maximum of 40mL) along the planned line of the central venous catheter, overlying the vein to be punctured and where skin is to be incised. • The needle should be inserted subcutaneously and lidocaine 1% with adrenaline 1:200,000 injected slowly, allowing 60 seconds for the injection to take effect. • Each injection of lidocaine 1% with adrenaline 1:200,000 injection must be preceded by aspiration to ensure needle is not intravascular.

Lidocaine 1% With Adrenaline (Epinephrine) 1:200,000 W/V Solution For Injection (20mL) (Administer)	
	• Where surgical excision of a central venous catheter is required, lidocaine 1% with adrenaline 1:200,000 injection is injected in approximately 3mL increments overlying planned skin incision site.
Quantity to be administered	Injected subcutaneously in approximately 3mL increments to a maximum of 40mL (400mg lidocaine).
Potential Adverse Reactions	Adverse effects are rare and usually the result of excessively high blood concentration due to inadvertent intravascular injection, excessive dosage, rapid absorption or occasionally due to hypersensitivity. Side effects include paraesthesia, dizziness, bradycardia, hypotension, hypertension, nausea and vomiting. System toxicity reactions can occur and the first symptoms of toxicity are usually, circumoral paraesthesia, numbness of the tongue, light-headedness, hyperacusis, tinnitus and visual disturbances. See SmPC for further details Nurses and radiographers must be aware of the risks, signs and symptoms as well as the treatment for acute systemic toxicity.
Follow up (If applicable)	Individuals should not leave if they are feeling unwell without speaking to the nurse or radiographer first. If necessary, a radiologist should be contacted for advice.
Storage	Store between +2°C and +8°C Do not freeze. The product must be discarded if frozen.