



British Pain Society and Faculty of Pain Medicine of the Royal College of Anaesthetists

Standards of Good Practice for Spinal Interventional Procedures in Pain Medicine

April 2020

To be reviewed March 2023



**THE BRITISH
PAIN SOCIETY**
EXPERTISE WHERE IT MATTERS



**FACULTY OF
PAIN MEDICINE**
of the Royal College of Anaesthetists

Published by:
The British Pain Society
3rd floor
Churchill House
35 Red Lion Square
London WC1R 4SG

Website: www.britishpainsociety.org

ISBN: 978-0-9935145-2-4

© The British Pain Society 2020

Contents

1.	Introduction	4
2.	Consent	4
3.	Preparation and identification of patients	6
4.	Environment and facilities	6
5.	Anticoagulation	7
6.	Sedation	7
7.	Assistance	7
8.	Fluoroscopy	8
9.	Infection Control	9
10.	Record keeping	11
11.	Follow-up and discharge planning	12
12.	References	13
13.	Working party	17
14.	Conflicts of interest	18

1 Introduction

This document describes the standards of good practice for pain specialists carrying out spinal interventional procedures (excluding epidural steroid Injection¹) in pain medicine as recommended by the British Pain Society (BPS) and the Faculty of Pain Medicine of the Royal College of Anaesthetists (FPMRCA). This document also defines the facilities required in order to safely carry out these procedures. This document however, does not serve as critical analyses of published evidence.

Interventional procedures are used widely to investigate and treat pain, caused by structures in and around the spine and other parts of the body. These procedures should not be undertaken in isolation and should include the support, guidance and decision making of an interdisciplinary team. Furthermore, these procedures should be undertaken in conjunction with rehabilitative interventions designed to reduce disability and enhance maximum improvement in quality of life.

The BPS and the FPMRCA recognise that clinicians from other medical disciplines perform spinal interventions. FPM has published guidance for FPM members, if asked to train extended scope practitioners for spine interventions². The FPMRCA however, only takes responsibility for the professional standards of Pain Medicine Specialists who hold FPMRCA or equivalent or are in recognised pain medicine training posts. These recommendations apply to both pain physicians in training, who perform interventional pain procedures under varying levels of supervision, and to established practitioners in non-training grades. The competencies expected of pain medicine doctors are defined in the Curriculum for a CCT in Anaesthetics (Certificate of Completion of Training) - Advanced Level Training (Annex E)³.

2 Consent

It is important to work in partnership with your patients when performing pain interventions. Always discuss their condition and treatment options and likely outcomes with them. You should respect their right to make decisions about their care and that they have the required time to do this. This may include time to obtain further information (including a second opinion) and consult with others. Obtaining informed consent is a process of discussion and joint decision-making. You should be satisfied that you have informed consent before you provide any treatment. This will involve providing information to patients in a way that they can understand before asking for their consent. Always follow the guidance provided by the GMC (2008)⁴.

In deciding how much information to share with your patients you should take account of their wishes, religious beliefs (or none) and social and economic circumstances. The information you provide should be in proportion to the nature of their condition, the complexity of the proposed treatment and the seriousness of any potential side effects, complications or other risks. You may need to support your discussions by using written material, visual or other aids; any material used however, must be accurate and up-to-date⁵. Furthermore, should you wish to use such material then this must be made available in an accessible format to the patient; factors such as age, ethnicity, cognitive/communication skills and capacity should be considered. Be aware of current recommendations about safeguarding vulnerable patients and follow the provisions of the 2005 Mental Capacity legislation⁶.

If you are the pain physician providing treatment, it is your responsibility to discuss this with the patient. If this is not practical, you can delegate this responsibility to another pain physician, provided you make sure the person to whom you delegate is suitably trained and qualified, has sufficient knowledge of the proposed treatment and understands the risks involved. They must understand and act in accordance with GMC guidance⁴. Some interventions may provide diagnostic information and this should be thoroughly explained to the patient and assessed by the physicians. Adequate time should be allowed for this to happen.

Adverse outcomes should be identified that may result from the proposed treatment including the potential outcome of taking no action. Risks will usually be side-effects/ complications or failure to achieve the desired aim. Patients should be informed about less serious complications if they are common and explain what the patient should do if they experience these. You must also inform patients if the treatment might result in a serious adverse outcome, even if the likelihood of this is minimal.

Written consent should be obtained but this is just the end point of the consent process. Use the patient's medical records or a consent form to record the key elements of your discussion with the patient. This should include the information you discussed, any specific requests made by the patient, any written, visual or other information given to the patient and the details of any decisions that were agreed.

3 Preparation and identification of patients

All hospital inpatients' should wear wristbands (identity bands) with accurate details that correctly identify them and match them to their care. All patient identification procedures should follow National guidelines^{7,8}. Allergies should be checked and noted according to local policy and practice.

The WHO safer surgery checklist should be used for all procedures to ensure appropriate checking of patient identity, site and nature of planned procedure, patient preparation, and readiness of equipment⁹.

When fluoroscopy is to be used in females of childbearing age, pregnancy status should be confirmed prior to the procedure according to National and local guidelines¹⁰.

Siting an intravenous cannula should be considered dependent upon locally agreed hospital policy and practice. In patients where sedation is required, intravenous cannulation should occur. It is recommended that an intravenous cannula should be sited before starting an epidural injection to allow prompt resuscitation as any epidural injection may be complicated by intrathecal, subdural or intravascular injection, cardiac arrhythmias and vasovagal responses.

Patients receiving local anaesthesia should be fasted prior to the procedure according to local hospital policy and practice. If the patient is to have conscious sedation they must be fasted as for general anaesthesia or according to locally agreed policy and practice^{11,12}.

4 Environment and facilities

Spinal interventions should be performed aseptically in an appropriate environment that adheres to local guidelines with regards to minimally invasive procedures. Infection prevention and control, monitoring, imaging and availability of assistance should all adhere to local policies and National guidelines. The clinical area should be of an adequate size in order to accommodate the staff and equipment necessary for safe minimally invasive procedure practice. The clinical area should have a fully equipped and staffed post anaesthesia care facility in close proximity. Resuscitation equipment, trained staff and facilities must be immediately available should this be required^{13,14}.

5 Anticoagulation

Particular care is needed in patients with disordered clotting either from medical problems or medication. The benefits and risks of the procedure should therefore be considered on an individual basis and, where needed, advice on withdrawal of anticoagulants should be sought from other clinicians involved in the patient's care such as supervising cardiologist, local haematology services and the patient's GP, where appropriate. This is important as abrupt withdrawal of anticoagulants may risk serious thrombotic episodes whereas the continued use carries an increased risk of bleeding¹⁵⁻¹⁸.

6 Sedation and analgesia

It is recognised there is a wide variation in sedation practise ranging from no sedation at all to routine use. For most procedures sedation is not required as reassurance, presence of theatre staff and adequate local anaesthesia usually suffices. Anxious patients or those describing severe pain on injection may benefit from sedation.

In patients where sedation is required, intravenous cannulation must occur.

Feedback from the patient during the procedure should be obtained and sedation used should be light and short acting. There is no recommended absolute upper limit of sedative or analgesic as it is recognised that patients vary widely in their tolerance of sedatives and analgesics^{19,20}. Guidelines have been issued from the NPSA in response to excessive doses of drugs used for endoscopy in elderly patients²¹. These suggest a maximum of 5mg Midazolam and additional analgesic. It is recognised that intravenous alfentanil, fentanyl and morphine are commonly used during the course of procedures to provide analgesia alongside sedatives.

7 Assistance

Assistance should be available to ensure that the procedure can be carried safely and with enough support in case of emergency.

There are no specific guidelines or recommendations but the following should be considered:

Presence of Radiographer: It is legally applied and usual practice in the UK to have a radiographer in charge of the imaging system, though the practitioner may control and move the 'C-arm'.

Assistant to the practitioner: Skilled Assistance to the practitioner should be available for allowing the checking and drawing up of drugs in a safe and sterile manner.

Monitoring of the patient: This should be undertaken by a further attendant who does not have other responsibilities. This becomes more important for longer procedures where continuous observation and regular recording of vital signs is essential. It is recognised that in some (shorter) cases this may be the same assistant who initially helps the practitioner draw up the drugs.

Skill level: The assistant (s) should be skilled in Immediate Life Support (ILS) (Resuscitation Council UK). All assistance should come from appropriately trained nursing or theatre staff. The use of Health Care Assistants whose skill level, knowledge and training in resuscitation and drug therapy may be rudimentary are not considered adequate as the main form of assistance for the practitioner or for monitoring for the patient.

Other assistance: Extra help should be available to safely move the patient as required.

8 Fluoroscopy

Understanding the fluoroscopic anatomy of the spine is essential to safely perform diagnostic and therapeutic spinal interventions²². It is recommended that fluoroscopy (or ultrasound/CT guidance) is used for spinal interventions.

For safe fluoroscopic assisted interventional procedures correct interpretation of key landmarks in AP, lateral and oblique views are important. A fluorolucent table is essential to perform fluoroscopic guided spinal interventions. Relevant images should be stored in the patient's records or hospital radiology system for clinical and legal purposes according to local hospital guidance

A non-ionic water soluble contrast medium can be injected before injecting any medication at the target point to aid in excluding incorrect needle position. The contrast medium should be licenced for spinal (including intrathecal) injection. Iodine containing contrast agents should be used with caution in patients with altered renal function and large volumes should not be used in patients on metformin²³.

9 Infection control

The objectives of infection control in any establishment should include educating personnel about the principles of infection control and stressing individual responsibility for infection control, collaborating with the infection control unit in risk assessment, monitoring and investigating potential or actual related infections.

Infection-control recommendations should follow the NICE guideline - Prevention and control of Health care associated infection in primary and community care specifically (updated 2017)²⁴, the Health and Social care act (2008), Code of practice on the prevention and control of infections.

This guideline should also be used in conjunction with the relevant Infection control section of other guidelines by the Royal College of Anaesthetists and the British Pain Society.

This includes but not limited to:

- 1.** Standards for good practice for medial branch block injections and radiofrequency denervation for low back pain (2020)²⁵
- 2.** Spinal cord stimulation for the management of pain; recommendations for best practice (2009)²⁶
- 3.** Intrathecal Drug delivery for the management of Pain and Spasticity in adults; Recommendation for Best Clinical Practice (2008)²⁷
- 4.** Recommendations for good practice in the use of epidural injection for the management of pain of spinal origin in adults (2020)¹

Preoperative patient selection and preparation should involve the identification and treatment of all remote infections prior to interventional procedures.

There is little published evidence regarding the use of antibiotic prophylaxis for Spinal Cord Stimulation (SCS) and Intrathecal Drug Delivery devices (ITDD). However, infection of an SCS/ITDD system is a significant problem and the consequences of infection justify the use of antibiotic prophylaxis. This is not the case for spinal interventions without the need for implantation except for intradiscal procedures where the risk of discitis is well described. The risk of infection may be enhanced in diabetic and immunocompromised patients or as a result of systemic steroid therapy.

Meticulous aseptic technique is mandatory and this should include surgical scrub according to local policy, sterile gown, sterile gloves, facemask, skin preparation and sterile drapes around the injection site.

A sterile field should be used for opening the instruments/kits associated with interventional procedures.

Patient hair should not be removed unless necessary to facilitate interventions. If hair is removed, it should be done immediately prior to surgery with the use of electric clippers.

Suitable skin preparation solutions include 0.5% chlorhexidine in alcohol or 10% povidone - iodine. If local guidelines exist for surgical skin preparation then they should be followed.

A wide area should be prepared and solutions should be allowed to dry before needle insertion. Particular care is required in skin preparation for caudal epidural injection because of the increased risk of skin contamination in this area.

When implantable devices are used operating rooms should meet standard recommendations for appropriate ventilation.

When peri-procedural imaging is anticipated the fluoroscopy or imaging unit should be draped within a sterile operative field at the start of the procedure.

The use of multi- dose vials for separate patients should not be practiced. Neither should contrast materials or other materials that can be contaminated by tissue fluids be shared among patients.

A dedicated contact person such as an infection control professional should be responsible for organisation of surveillance data, audit and dissemination of surveillance results.

10 Record keeping

Standards of record keeping should be audited in accordance with local clinical governance arrangements.

Records should include the following information:

- Clinical indication for injection
- Date and time of procedure
- Type of procedure performed
- Name of clinician performing procedure (Printed and signed)
- Position of patient
- Sedation (if used), oxygen, monitoring
- Skin preparation
- Spinal level of injection
- Size of needle (gauge and active tip length)
- Radio-opaque contrast and dose if used
- Any difficulties encountered
- Injected drugs and doses
- Patients should be encouraged to maintain a pain diary at rest and activities of daily living before and after the procedure when diagnostic spinal interventions are performed
- Stimulation parameters, temperature, duration and the number of lesions when Radiofrequency Denervation is performed.
- Appropriate images taken during the procedure to confirm the position of the needle and before and after injection of a radio contrast dye if it is used. Relevant images should be stored in the patient's records or hospital radiology system for clinical and legal purposes according to local hospital guidance^{24, 27}.
- Post-procedure observations
- Aftercare instructions
- Follow up arrangements
- Contact details for patient and primary care team

11 Follow up and discharge planning

On the day of the procedure, patients' should be seen by a member of the treating team or a specifically assigned member of staff on admission and prior to discharge. The patient's limbs should be checked for numbness and/or weakness and should be asked about urine retention or headache. Patients' should be ready for discharge one to three hours after the procedure. Usual medication can be resumed on the day of the procedure. If there is unexpected significant limb weakness, sensory loss or headache, an unplanned overnight admission may be necessary, with a review the following day before discharge.

If the procedure is complicated by inadvertent dural puncture then the patient may need a more prolonged admission and management in accordance with local guidance. Facilities for overnight stay should therefore be available.

After discharge, a reliable telephone contact number must be provided so that the patient can report any acute complication such as headache, fever, prolonged numbness/ weakness or urinary retention. The day surgery unit, as part of the normal discharge procedure, should provide this.

Other healthcare providers (primary care team, emergency department or day care staff) who may be involved in the patient's care after the injection should know how to contact a member of the treating team or hospital staff by telephone in order to help make management decisions where necessary.

A letter, with a copy provided to the patient, should be sent to the patient's GP detailing the procedure and follow up arrangements. The letter should emphasise that fever, severe back pain or worsening neurological and/or urinary symptoms are potentially serious adverse events and that the patient should be monitored at primary care level for any such complications.

Emergency full spine MRI scanning should be available. Arrangements should be in place for urgent referral for neurosurgical or spinal surgical opinion.

12 References

1. Recommendations for good practice in the use of epidural injection for the management of pain of spinal origin in adults (2020) <https://www.fpm.ac.uk/standards-publications-workforce-guidelines-publications/clinical-guidelines> (Accessed April 2020)
2. Standards for the members of the Faculty of Pain Medicine (FPM) for training and administration of pain interventions by non-medical practitioners. <https://www.fpm.ac.uk/sites/fpm/files/documents/2019-07/Training%20and%20Administration%20of%20Pain%20interventions%20by%20non%20medical%20practitioners.pdf> (Accessed April 2020)
3. The Royal College of Anaesthetists. CCT in Anaesthetics - Advanced Level Training Annex E. 2nd Ed, 2010 (updated 2017). Available from: <https://www.rcoa.ac.uk/sites/default/files/documents/2019-08/TRG-CCT-ANNEXE.pdf> (Accessed April 2020)
4. General Medical Council. Consent: patients and doctors making decisions together. London, GMC, 2008. Available from: <https://www.gmc-uk.org/ethical-guidance/ethical-guidance-for-doctors/consent> (Accessed April 2020)
5. Faculty of Pain Medicine. Interventions – Patient Information Leaflets. <https://fpm.ac.uk/about-pain-medicine-patients-relatives/patient-information-leaflets> (Accessed April 2020)
6. Mental Capacity Act 2005. Chapter 9. Available from: <http://www.legislation.gov.uk/ukpga/2005/9/contents> (Accessed April 2020)
7. National Patient Safety Agency. Safer Practice Notice 11. Wristbands for hospital inpatients improves safety, 22 Nov 2005. Available from: www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID=60032&type=full&servicetype=Attachment (Accessed April 2020)

8. National Patient Safety Agency. Right patient – right care: improving patient safety through better manual and technology-based systems for identification and matching of patients with care, 2004. Available from: <http://www.npsa.nhs.uk/EasysiteWeb/getresource.axd?AssetID=3234&type=Full&servicetype=Attachment> (Accessed April 2020)
9. World Health Organisation. Safe Surgery Saves Lives: The Second Global Patient Safety Challenge, 2009. <http://www.who.int/patientsafety/safesurgery/en/> (Accessed April 2020)
10. Advice from the Health Protection Agency, The Royal College of Radiologists and the College of Radiographers. Protection of Pregnant Patients during Diagnostic Medical Exposures to Ionising Radiation, March 2009. Available from: <https://www.rcr.ac.uk/publication/protection-pregnant-patients-during-diagnostic-medical-exposures-ionising-radiation> (Accessed April 2020)
11. Association of Anaesthetists of Great Britain & Ireland Safety Guideline. Pre-operative Assessment and Patient Preparation: The Role of the Anaesthetist, Appendix 1, 2010. Available from: <http://www.aagbi.org/sites/default/files/preop2010.pdf> (Accessed April 2020)
12. Royal College of Nursing Guideline for Perioperative fasting in adults and children. London, RCN, January 2013. Available from: <https://www.rcn.org.uk/professional-development/publications/pub-002779> (Accessed April 2020)
13. R Verma, R Alladi, I Jackson, et al. Day case and short stay surgery: 2, *Anaesthesia*, 2011, 66 (5) 417-434.
14. Core Standards for Pain Management Services in the UK. Faculty of Pain Medicine of the Royal College of Anaesthetists, October 2015. <https://fpm.ac.uk/standards-publications-workforce/core-standards> (Accessed April 2020)
15. Bodi-Zoccai GGL, Lotrionte M, Agostini P, et al. A systematic review and metaanalysis on the hazards of discontinuing or not adhering to aspirin among 50 279 patients at risk for coronary artery disease. *European Heart Journal*, 2006, 27, 266774

16. Narouze S, Benzon HT, Provenzano D, et al. Interventional spine and pain procedures in patients on Antiplatelet and Anticoagulation medication (second edition). *Regional Anesthesia and Pain Medicine* 2018; 43 (3): 225-262
17. Manchikanti L, Malla Y, Bradley W, et al. A Prospective Evaluation of Bleeding Risk of Interventional Techniques in Chronic Pain: Prospective Evaluation. *Pain Physician*, 2011, 14, 317-329
18. Anticoagulants. In: Nikolai Bogduk (ed.), *Practice Guidelines: Spinal Diagnostic and Treatment Procedures*. 2nd Edition, San Francisco, California, USA: International Spinal Intervention Society, 2013, pp 9 - 17.
19. Academy of Medical Royal Colleges. Safe sedation practice for healthcare procedures – Standards and guidance. October 2013. <https://www.aomrc.org.uk/reports-guidance/safe-sedation-practice-1213/> (Accessed April 2020)
20. Standards for Conscious Sedation in the Provision of Dental Care (Report of the Intercollegiate Advisory Committee for Sedation in Dentistry). The dental faculties of the royal colleges of surgeons and the Royal College of Anaesthetists, 2015 (updated for ease of use in March 2020). Available from: <https://www.rcseng.ac.uk/dental-faculties/ifds/publications-guidelines/standards-for-conscious-sedation-in-the-provision-of-dental-care-and-accreditation/> (Accessed April 2020)
21. NPSA Patient Safety Bulletin. January 2007, p3.
22. S Gupta and K Dhandapani. Applied anatomy and fluoroscopy for spinal interventions. In: K Simpson, G Baranidharan, S Gupta (eds.), *Oxford Specialist Handbook in Pain Medicine: Spinal Interventions in Pain Management*, Oxford: Oxford University Press, 2012, pp1-10.
23. The Royal College of Radiologists. Metformin : updated guidance for use in diabetics with renal impairment. London, The Royal College of Radiologists. 2009
24. NICE - Prevention and control of Health care associated infection in primary and community care. Available from <http://www.nice.org.uk/guidance/cg139/resources>. Updated 2017 (Accessed April 2020)

25. Standards for good practice for medial branch block injections and radiofrequency denervation for low back pain (2020) <https://www.britishpainsociety.org/british-pain-society-publications/professional-publications/> (Accessed April 2020)
26. Spinal cord stimulation for the management of pain; recommendations for best practice (2009) https://www.britishpainsociety.org/static/uploads/resources/files/book_scs_main_1.pdf (Accessed April 2020)
27. Intrathecal Drug delivery for the management of Pain and Spasticity in adults; Recommendation for Best Clinical Practice (2015). https://www.britishpainsociety.org/static/uploads/resources/files/litdd_2015_pro_v3.pdf (Accessed April 2020)

13 Working Party- Second Edition

Dr Sanjeeva Gupta (Chair), Consultant in Pain Medicine, Bradford Teaching Hospitals NHS Foundation Trust, Bradford

Dr Neil Collighan, Consultant in Pain Medicine, East Kent Hospitals University NHS Foundation Trust

Ms Louise Trewern, British Pain Society, Patient Liaison Committee Representative

Dr Manohar Sharma (Faculty of Pain Medicine Representative), Consultant in Pain Medicine and Anaesthesia, Walton Centre for Neurology and Neurosurgery, Liverpool

Dr G Baranidharan, Consultant in Pain Medicine and Anaesthesia, Leeds Teaching Hospitals, Leeds

Working Party – First Edition (2015)

Dr Neil Collighan (Chair), Dr Sanjeeva Gupta (Co-Chair), Dr Shyam Balasubramanian, Dr G Baranidharan, Dr Anthony Hammond, Dr Vivek Mehta, Dr Rajesh Munglani, Dr Sherdil Nath, Ms Sara Payne, Dr Manohar Sharma, Dr Karen Simpson, Dr Simon Thomson, Dr Jonny Rajan, Dr Joshua Adedokun.

14 Conflicts of interest

This publication received no specific grants from any funding agency in the public, commercial, or not-for-profit sectors.

G Baranidharan and S Gupta are editors of Oxford Specialist Handbook in Pain Medicine: Spinal Interventions in Pain Management, Oxford: Oxford University Press, 2012. The chapter: Applied anatomy and fluoroscopy for spinal interventions, pp 1-10 by S Gupta and K Dhandapani is referenced in this document.

Dr S Gupta has organised meetings sponsored by NeuroTherm Limited who market radiofrequency generators and disposables.

Dr S Gupta is the Founder and Chairman of the North England Pain Medicine Group (NEPG). The annual meetings of NEPG have been supported by Pfizer, Abbott and other Pharmaceutical companies and equipment manufacturing industries.



**THE BRITISH
PAIN SOCIETY**
EXPERTISE WHERE IT MATTERS

Churchill House - 35 Red Lion Square
London WC1R 4SG UK

www.britishpainsociety.org
info@britishpainsociety.org

A company registered in England and Wales and limited by guarantee.
Registered No. 5021381. Registered Charity No. 1103260.
A charity registered in Scotland No. SC039583