



Royal College
of Nursing

Patients undergoing vascular intervention

Best practice guidance for nursing staff



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Introduction

This guidance was developed by the Royal College of Nursing (RCN) Imaging Nurses Forum. It aims to support radiology nurses (nurses registered with the NMC in accordance with NMC 2010 guidance) in providing a clinically effective and safe environment when assisting with procedures that provide diagnostic images of patients' blood vessels and treatment of vascular problems.

Patients undergoing these procedures will be admitted to either a ward, a planned investigation unit, a day patient unit or to radiology department day beds. The procedure preparation will be the same in all cases.

This best practice guidance is divided into three parts and follows the patient's journey:

- pre-procedure
- peri-procedure
- post-procedure.

This guidance has been produced to facilitate consistency throughout radiology departments nationally. It can be used in conjunction with other best practice guidance for imaging nurses. This guidance can also be a useful source of reference for support workers and other health care professionals.

1 Pre-procedure

Approximately two weeks before the procedure a registered radiology nurse, with knowledge and experience of the procedure, should pre-assess the patient. If this is not possible, the patient should attend a pre-assessment clinic. Although it is best practice to see the patient before their procedure, in some instances this assessment may be in the form of a telephone call. All information obtained should be documented in the patient's notes.

Action	Reason for action
Pre-assessment	
Obtain patient history as per local guidelines for each procedure.	Gain information about the patient in order to assess the patient's suitability for the proposed procedure.
Explain the procedure to the patient, and give written information.	Assists the patient to understand the procedure and to make an informed decision about proceeding.
Give advice as per local guidelines with regard to medications that need to be stopped prior to procedure and hydration prior to procedure.	Minimises the risk of complications such as bleeding, contrast induced nephrotoxicity/nephropathy and metformin induced lactic acidosis.
For females of child-bearing age pregnancy status should be obtained.	Avoids exposing the foetus to ionising radiation.
Measure and record blood pressure, pulse, respiration rate and oxygen saturation levels.	To identify the patient's normal range and establish a baseline.
Obtain blood samples and screening swabs as per local policy and ensure any abnormal results are acted on.	To ensure it is safe to administer intravenous/intra arterial contrast, to identify pathogenic organisms and to reduce the risk of bleeding.
The patient should arrange for someone to take them home and stay with them overnight, post-procedure, unless they are to remain in hospital overnight.	To ensure immediate attention should post procedure complications occur.
Written consent can be obtained by medical staff or a suitably trained and qualified person, who has sufficient knowledge of the procedure, to whom the role has been delegated.	Establishes that the patient has full understanding of what is involved, the potential benefits and risks, and wishes to proceed.
Undertake risk assessments as per local policy: to include Waterlow score.	Assess individual patient needs, and identifies tissue viability risk.
Give the patient a date and time for the procedure and explain that they should refrain from eating food for six hours pre-procedure and drinking fluids for two hours pre-procedure, or as per local policy.	To ensure the patient is able to attend and to reduce the risk of regurgitation and inhalation of stomach contents, if sedation is administered.

Action	Reason for action
On the day of the procedure	
Patients who are taking anticoagulants may need a blood test to check coagulation status. Refer to local guidance.	Minimises the risk of haemorrhage.
Check the patient has undergone relevant pre-procedural investigations.	To ensure all relevant information is available to the operator/radiologist.
Written consent from the patient will be obtained (or confirmed) by the clinician performing the procedure, or a designated professional with sound knowledge of the procedure.	Establishes that the patient has full understanding of what is involved, the potential benefits and risks, and wishes to proceed.
Insert an intravenous cannula.	Allows immediate administration of sedation, or emergency drugs and intravenous fluids.
Ensure the patient is wearing an identification bracelet, with the correct information.	To ensure correct patient identification and prevent possible problems/errors.
Ensure all required equipment is available, as per WHO/RCR* check list.	Promote patient safety and reduce delays to procedure.
Observe and record the patient's blood pressure, pulse, respirations, oxygen saturation and foot pulses.	Identifies baseline clinical observations which allow rapid assessment of the patient and limb status, enabling immediate action if there is any deterioration during and/or post-procedure.
Complete the pre-procedure checklist.	Ensures all details are correct and it is safe to proceed.
Offer the patient use of the toilet.	Promotes patient comfort, prevents a full bladder obscuring the field of view, and minimises the risk of urine retention after the procedure.
Escort the patient to the interventional/angiography room, and hand over patient information to the radiology scrub/circulating nurse.	Ensures patient safety, allays their anxiety and promotes patient security.

* See glossary on [page 11](#).

2 Peri-procedure

The nursing team should include registered, qualified nurses who are competent in performing the role of circulating/scrub nurse and who possess advanced resuscitation skills. This ensures appropriate monitoring, support and safe delivery of patient care through observation.

Action	Reason for action
Receive the patient from the ward and complete the accompanying checklist.	To ensure up-to-date accurate information is available and to ensure the patient still wishes to proceed.
Explain the procedure and equipment to the patient.	Reassures the patient and reduces any anxiety.
Reassure the patient and answer any questions.	To provide emotional support to the patient.
Written consent should be obtained if not previously done.	Establishes that the patient has full understanding of what is involved, the benefits and risks, and wishes to proceed.
The circulating/scrub nurse initiates a 'sign in' (as per the WHO/RCR* safety checklist) with all staff involved in the case prior to the procedure starting.	To ensure all staff can make informed decisions during procedure. To reduce risk to the patient.
Assist with positioning the patient and ensure they are covered by a gown or blanket.	To maintain the patient's dignity, comfort and body temperature.
Provide limb support, with the use of tissue viability aids as required.	To prevent pressure sores.
Connect the patient to a monitor and record blood pressure, oxygen saturation, respiration rate and pulse rate, at locally agreed intervals.	To provide a baseline for comparison during, and post-procedure. Allows early identification of complications, ensuring prompt action should they arise.
The circulating nurse assists the scrub nurse in the preparation of a sterile field with all the equipment needed for the radiologist, using aseptic technique.	Reduces risk of infection and ensures smooth running of the procedure.
The scrub nurse prepares all equipment (catheters and wires) using aseptic technique.	Maintains sterility throughout procedure, and minimises infection risk.
The circulating nurse assists the scrub nurse in preparing and checking drugs and solutions, and obtains equipment when required. NMC (2010) standards for medicine management are followed.	Ensures correct drug/solution is administered according to NMC and local policy, and that equipment is readily available.

* See glossary on [page 11](#).

Action	Reason for action
The scrub nurse assists the radiologist during the procedure with the preparation and handling of instruments, guide wires and catheters.	Maintains smooth running of the procedure and keeps risks to a minimum.
Following assessment, the radiology scrub nurse will, as per local guidance, be able to flush in situ arterial catheters.	Prevents the formation of micro-emboli.
At the end of the procedure the scrub nurse disposes of all sharps and clinical waste in accordance with local policy.	Reduces the risks to patients and staff by following local policies on infection control, clinical risk and health and safety.
Following assessment, the radiology nurse will be able to undertake arterial compression as per local protocol.	Ensures safety of patient in the event of unexpected bleeding post-procedure.
The circulating/scrub nurse ensures the patient's care pathway/plan is completed and signed. The WHO/RCR* checklist 'sign out' is completed. The radiologist should document special post-procedure orders.	Ensures complete documentation for easy access and future reference, and makes sure appropriate treatments are carried out in the follow-up period.
Ensure that the patient's care pathway/plan is completed and signed. The radiologist should prescribe any post-procedure medication.	Ensures complete documentation for easy access and future reference, and makes sure appropriate treatments are carried out in the follow-up period.
The radiology nurse gives a complete handover to the recovery nurse or ward nurse. This includes details of the procedure, post-procedure care and possible complications.	Enables effective follow-up by documenting and communicating future care needs and possible complications.
The completed WHO/RCR* safety checklist is scanned onto the radiology department's computer system.	Ensures complete documentation for easy access and future reference.
Tell the patient about post-procedure care before they leave the radiology department.	Reassures and informs the patient about what to expect, and gains their compliance in future care.

* See glossary on [page 11](#).

3 Post-procedure

The patient may be transferred back to the ward following their procedure or be cared for in radiology day beds. Post-procedure instructions should be documented and followed to reduce the risk of complications occurring.

Action	Reason for action
Transfer the patient onto a bed/trolley, and advise them of post-procedure instructions such as bed rest requirements, fluid intake, as per local policy.	Minimises the risk of haemorrhage/haematoma and renal complications.
Observe puncture site for signs of bleeding. Ask the patient to report any pain. Monitor and record the patient observations, including oxygen saturation levels, pulse, blood pressure, limb status and respiration rate at locally agreed intervals, for signs of potential complications.	To promote patient comfort and early detection of post-procedural complications.
Refer to local policy and manufacturer's instructions if a closure device is used.	Ensures correct deployment of device, patient after care and early detection of complications.
Inform the medical staff promptly of any changes in the patient's condition, such as, pain, signs of distress or changes in the limb status.	To ensure prompt medical attention.
If haematoma is present, observe and mark its size, report any increase in size.	Ensures accurate documentation and monitoring of haematoma if this occurs.
Have prescribed analgesia available.	Patient will be comfortable and as pain free as possible.
Give the patient written post-procedure information covering emergency assistance, wound care, mobility instructions and medication when they are ready for discharge.	The patient will be reassured, informed and has access to support once they are discharged, reducing complications.
Give full explanation to the patient of when results will be available and details of follow-up appointments.	The patient is aware of when their results and any future treatment will be discussed.

4 References and further reading

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5 Glossary

NMC Nursing and Midwifery Council

RCR Royal College of Radiologists

WHO World Health Organization



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