



BSNR Standards Sub-Committee

National Safety Standards for Invasive Procedures

Introduction

National Safety Standards for Invasive Procedures (NatSSIPs) aim to reduce the number of patient safety incidents related to invasive procedures in which surgical Never Events could occur. These standards set out broad principles of safe practice, building on the existing WHO Surgical Checklist and are relevant to all invasive procedures including those performed outside of an operating department. Invasive procedures relevant to radiology include all interventional procedures, including biopsy and drain insertion.

It is recommended that NHS Trusts develop their own Local Safety Standards for Invasive Procedures (LocSSIPs) that include the key steps outlined in the NatSSIPs. These should not replace local policies and standard operating procedures.

The NatSSIPs are considered in two groups: organisational (the standards that underpin the safe delivery of procedural care) and sequential (a logical sequence of steps that should be performed for every procedure session or operating list in every patient).

Organisational

- Governance and audit
- Documentation of invasive procedures
- Workforce
- Scheduling and list management
- Handovers and information transfer

Sequential

- Procedural verification and site marking
- Safety briefing
- Sign in
- Time out
- Prosthesis verification
- Prevention of retained foreign objects
- Sign out
- Debriefing



Key aspects relevant to radiological departments are summarized below:

1. Organisational

- Governance and audit
 - Full implementation and audit of all LocSSIPs including regular multidisciplinary meetings of the team.
 - Any safety incidents and near misses should be documented, investigated and reported. Learning points should be fed back to staff as part of continuous improvement. The process should be fully transparent and open in line with statutory Duty of Candour.

- Documentation
 - Standardised documents to assist in sharing of patient information between teams at point of handover are essential. This essential information includes pre-procedural assessment, the conduct of anaesthesia or sedation, the procedure itself and post procedural care.
 - The documentation should also include compliance with the sequential events and other LocSSIPs.

- Workforce
 - The standard supports the principle of safe care which depends on the correct numbers of appropriately trained and experienced staff members who work effectively as a team.
 - Individual organisations must develop LocSSIPs to identify the workforce required for specific procedures.
 - In terms of Neuroradiology, out of hours interventional procedures require specific consideration at a local level. Whilst local practices may vary the overall aim should be to provide similar levels of workforce out of hours to within hours, particularly when performing high risk or complex procedures.

- Scheduling and list management
 - Accurate scheduling of procedures, both elective and emergency should be performed in a standardised way without ambiguity. Laterality should be written in full, i.e. 'left' and 'right'.
 - Priority in the order of a list should consider clinical criteria (e.g. urgency, extremes of age, allergies such as to latex), and medical conditions (e.g. diabetes).
 - LocSSIPs should dictate the processes by which the final version of a list is signed off by the operating team prior to distribution.
 - Late changes to the list should be confirmed at the time of the safety briefing before commencing the first case.



- Handovers and information transfer
 - LocSSIPs should be developed within organisations to ensure safe and effective handover of patient care between teams.
 - Handover between members of the procedural team during a procedure should be avoided. When lengthy procedures are predicted, working patterns should be adjusted to minimize changes in staff. When necessary during a procedure all information concerning patient care must be handed over. When there is a change of scrub practitioners, the outgoing and incoming practitioners must ensure that all items are identified, and counts are correct.

2. Sequential

- Procedural verification of site marking.

Organisations must develop and implement LocSSIPs that ensure the patients undergo the correct procedures on the correct sites and sides.

- Safety briefing

Procedural team briefing is a key element of practice in the delivery of safe patient care during invasive procedures, and forms part of both the WHO Surgical Safety Checklist and the Five Steps to Safer Surgery.

- Sign in, Time out and Sign out

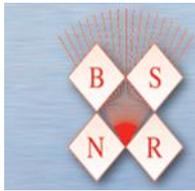
All patients undergoing invasive procedures must undergo safety checks on arrival at the procedure area. There should be a further set of checks just immediately prior to the procedure, with a final check at the end of the procedure. These are also all part of the WHO Surgical Safety Checklist and the Five Steps to Safer Surgery.

- Prosthesis verification and Prevention of retained foreign objects

LocSSIPs should ensure that safe and consistent practice in accounting for all items used during invasive procedures are maintained.

- Debriefing

Procedural team debriefing is a key element of practice in the delivery of safe patient care during invasive procedures. Organisations should ensure that working patterns allow for these debriefings.



Summary and Implications

Whilst most of NatSSIPs recommendations should have already been adopted at a Trust level (particularly those relating to WHO Surgical Safety Checklist) there is one key aspect that needs to be considered within Radiological departments. **This involves the provision of out of hours interventional care and treatment.** The NatSSIP states that similar levels of workforce out of hours to within hours should be provided. This is a matter for discussion at an individual Trust and Department level, with the exact numbers (Anaesthetists/ODA, Radiologists, Nurses, and Radiographers) depending on many factors. Should Trusts wish to differ from the NatSSIP statement of “similar levels”, local arrangements and clinical governance agreement should be documented, and incidents recorded.

To aid individual Trusts and departments in creating LocSSIPs, a locally produced Safety Standard is included in appendix 1 (written by Dr. VEL Young, Neuroradiology Consultant, John Radcliffe Hospital, Oxford, and reproduced with kind permission). **This could be adapted at an individual Trust level to suit local working arrangements.**

It is essential that a formal documented multidisciplinary meeting (MDT) takes place on a regular basis. This would ideally have a documented Terms of Reference (TOR) indicating the number and clinical specialties required to be quorate.

Reference:

www.england.nhs.uk/.../natssips-safety-standards.pdf



Appendix 1: example of local SOP

Safe procedural standards for Neuroradiology Interventional Service (In-hours and out-of-hours)

Introduction

NHS England has produced a national safety standard for invasive procedures, which were recently reviewed by the British Society of Neuroradiology Standards Subcommittee. This policy has been produced to acknowledge the standards document and reflect this in the operation of the Neuroradiology Interventional Service.

Currently the only interventional procedures carried out routinely out of hours is endovascular treatment of a straightforward ruptured intracranial aneurysm, which is performed during the daytime at a weekend. Occasionally diagnostic cerebral angiograms and embolisation for indications such as epistaxis or arterial rupture will also be performed. It is envisaged that in the near future, with the expansion of the acute mechanical thrombectomy service, that this procedure will also be performed out of hours.

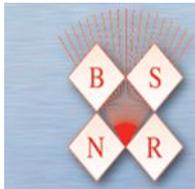
The aim of this document is to outline the safe procedural standards for providing the Neuroradiology Interventional Service both in hours and out of hours.

Scope

This policy applies to all clinical staff working in the Angiography suite in the Neuroradiology department.

Responsibilities

1. All doctors, nurses and radiographers who are involved in the neuroradiology interventional service should follow this procedure.
2. Clinical and Divisional Directors and Divisional Nurses are responsible for ensuring the procedure is disseminated and implemented and necessary resources are available.
3. Clinical Directors and Matrons are responsible for ensuring all staff are aware of the procedure and for informing the Divisional Nurse and Divisional Director if additional resources are identified as necessary to comply with the procedure.



Content

Operating hours

The standard operating hours of the neuroradiology interventional service is 8 AM until 6 PM, Monday to Friday. Weekend operating hours where all accepted out of hours procedures could be performed are considered 8 AM until 6 PM, Saturday, Sunday and bank holidays if the appropriate interventional team is available. Out with the standard and weekend operating hours are considered out-of-hours.

Procedures provided

Minimum staffing levels for procedures performed in/out of hours have informally been agreed including the scope of what procedures would be performed in these scenarios. In hours, the lists are staffed to take into account the more complex work performed, allow a mixture of experienced and less experienced team members (all disciplines), take into account supervision of students/trainees (all disciplines) and allow a continuously running list through the day with enough nursing staff to cover for natural breaks, anaesthetic/radiographer support allowing.

The decision of the interventional consultants as to the scope of the work carried out on call is as follows:

1. Weekend/bank holiday
 - Straightforward ruptured aneurysm embolization (coiling/balloon-assisted coiling)
 - Acute stenting only as a bailout procedure for a complication of a simple coiling
 - Urgent diagnostic cerebral angiogram, which cannot wait till a normal working day
 - Urgent (cannot wait for normal working hours) minor fluoroscopy guided procedures, e.g. myelography, spinal marker only with the agreement of the responsible consultant
 - Rarely, urgent embolization for acute haemorrhage with potential haemodynamic compromise e.g. arterial damage and epistaxis
2. All times out of hours
 - Mechanical thrombectomy (only once Trust/regional agreement, SOP in place and there is an appropriately staffed rota)
 - Carotid stenting (only in the context of mechanical thrombectomy and if the operator is appropriately trained).

There is consensus within the interventional team that complex aneurysm treatment, and routine use liquid embolic agents will not be performed out of hours, unless there are extenuating circumstances, for example, liquid embolic agents may be used in emergency parent vessel occlusion if this is felt the safest option and the operator is appropriately trained.



It is acknowledged that the team available for out of hours procedures is reduced compared to normal working hours, hence the restriction in the work that is carried out at this time.

If complex work was to be performed as an additional list over a weekend/bank holiday then the staffing level for a case would need to match that of an in hours list, on which the procedure would normally be performed.

Minimum team

The normal *minimum* complement of staff during *standard operating hours* is:

- one neurointerventional consultant
- one assistant (second neurointerventional consultant, registrar/fellow, nurse)
- one scrub nurse
- one circulating nurse
- one radiographer

In addition for general anaesthesia cases:

- one anaesthetist
- one operating department practitioner

For *weekend working hours* the *minimum* complement of staff is:

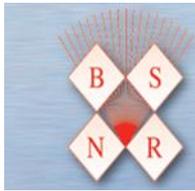
- one neurointerventional consultant
- one assistant (registrar/fellow; minimum three months INR training or trained nurse) also acting as scrub nurse
- one trained circulating nurse
- one radiographer

In addition for general anaesthesia cases:

- one anaesthetist
- one operating department practitioner

For *out-of-hours* cases the *minimum* agreed complement of staff is:

- one neurointerventional consultant
- one assistant (trained nurse) also acting as scrub nurse
- one identified circulating team member (could be radiographer, second nurse etc.)
- one radiographer
- one anaesthetist
- one operating department practitioner



Operating List

The operating list produced for the angiography suite should include the following details:

- Named interventionalist for the session
- Named anaesthetist for the session
- Patient details
 - Name
 - Hospital number
 - DOB
 - Gender
- Patient location
- Procedure details
 - including both the side and the details of the procedure e.g.. Coil embolization of right middle cerebral artery aneurysm or Onyx embolization left-sided dural arteriovenous fistula
- Anaesthesia required (general, local, sedation, anaesthetist present)
- Non-standard equipment
- If HDU/ITU bed required post-procedure

The up-to-date procedure list should be clearly displayed in the procedure room. Abbreviations should be avoided but when used it should not be assumed that of the team are aware of what they stand for. An accepted list of abbreviations should be available.

The scheduling/structure of the session must consider the expected workload and take into account the time taken for factors such as:

- Team briefing, WHO checks, team debriefing
- Induction of/emergence from anaesthesia and time taken for anaesthetic procedures
- Patient positioning and preparation
- Preparation of all necessary equipment
- Familiarity, skill mix and expertise of team members

WHO checklist

The steps of the Radiology WHO checklist should be performed including all members of the team as appropriate.

Site marking is not appropriate for the majority of cases performed in the Neuroradiology angiography suite, as the access site is remote from the internal operative site. The treatment location is included in the consent form and verbally confirmed with the team during the WHO checklist. For the few cases, such as TIC injections, where the surgeons have marked the operative site on the ward, this is confirmed as part of the WHO checklist before the patient is anaesthetised.



During procedures

Handovers between team members should be minimised during the procedure. Where there is a change of scrub staff, both the departing and joining team members should confirm together the open items/wire count.

When opening devices, the requested equipment (Stents, coils, catheters) etc. will be shown to a member of the scrub team to confirm that it is the requested device and that it is in date. A log of the opened catheters and wires is kept during the case and all equipment is accounted for by the operator and scrub nurse/assistant at the end of the case during the sign out for the WHO checklist. Any implanted devices used are recorded in the operation note and the device details (packet sticker) scanned onto CRIS and, if it is a stent placed into the stent log.

Documentation

Current practice is to provide a written operation note at the time of the procedure, which documents an overview of the procedure, any complications and the post-operative instructions. This is currently a handwritten note, but it is anticipated that this will become an electronic record once the plans for completely electronic patient records progresses within the Trust. A written report of the procedure and imaging findings is then provided on the CRIS/PACS system on the same working day as the procedure. If the images need further review, then a report will be issued describing the procedure and any complications with an addendum to follow later discussing the findings.

Standardised paper documentation for consent, WHO checklists, care plans, documentation of equipment etc. is used, as with the operation note, but it is anticipated that these documents will also become an electronic record once the plans for completely electronic patient records progress. The WHO checklist, consent form, written operation note, and wire count are scanned and attached to the relevant CRIS event.

Audit and governance

Cases performed in the neuroradiology angiography suite are discussed at the weekly departmental morbidity and mortality meeting for the service. Overall outcomes are reviewed at the six-monthly regional morbidity and mortality meeting. Regular audits of different aspects of the service are performed and submitted to clinical governance. In compliance with Trust policies, DATIX forms are completed for any incidents with feedback as part of continuous service improvement; and Duty of Candour is observed.



Appendix 2

BSNR Standards Subcommittee (2015 – 2018)

Chair: Dr Gerardine Quaghebeur

Members:

Dr “Kling” Chong (Great Ormond Street Hospital)
Dr Wen-Xern Chong (Trainee; Oxford)
Dr O Conway (Portsmouth)
Dr P Flynn (UKNG representative 2017 onwards; Belfast)
Dr Catriona Good (Brighton)
Dr Harriet Joy (Southampton)
Dr Norman McConachie (Nottingham)
Dr A Rennie (London)
Dr David Summers (Edinburgh)
Dr Phil White (Newcastle)

Lead Author: Dr Adam Rennie, Consultant Neuroradiologist (Intervention), London

Contributor: Dr VEL Young, Consultant Neuroradiologist (Intervention), Oxford