Electrophysiological Studies & Radiofrequency Ablation Procedures Standard Operating Procedure LocSSIP UHL Cardiology Cath Labs

Change Description	**Reason for Change**
☐ Change in format	X Trust requirement

APPROVERS	**POSITION**	**NAME**
Person Responsible for Procedure:	Consultant Cardiologist Consultant Cardiologist	Dr Mokhtar Ibrahim Dr Riyaz Somani
SOP Owner:	ANP	Sue Armstrong
Sub-group Lead:	Deputy Sister Senior Chief Cardiac Physiologist ANP Superintendent Radiographer	Megan Bates Shirley Richardson Sue Armstrong Debbie Smith

Appendices in this document:

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Introduction and Background:

This Standard Operating Procedure (SOP) outlines in the patient pathway for those patients undergoing Electrophysiology Study (EPS) +/- ablation procedures including conventional and 3 D mapping techniques, Radiofrequency Ablation (RFA), Cryoablation, Epicardial ablation and ablation in adults with congenital heart disease.

Referral / List management and scheduling:

The patient's journey from referral for EPS +/- ablation to transfer back to the referring team differs for inpatients and elective patients.

Inpatients
A referral is made for inpatients review via the EP consult mail box. The patients are then reviewed by a Consultant Electrophysiologist before being referred for a procedure. A decision is made whether the patient needs an inpatient or outpatient procedure. For an inpatient procedure, the patient will be referred via the relevant Electronic referral system and then added to the inpatient waiting list. They are prioritised in date order unless clinically indicated through verbal communication from the senior medical team.

Electives
Elective patients are referred via a proforma completed in outpatients processed by the cardiology admissions team. For those patients seen within the clinic some patients will have bloods and MRSA screening swabs arranged on the day of the clinic appointment when appropriate. Patient information leaflets can be given out in clinic or are sent with the pre-admission / admission documentation. Preadmission appointments may be carried out over the telephone or in a face to face preadmission clinic.

Patients are then added to the waiting list on HISS and breach date established by the Cardiac admissions team. The weekly catheter lab schedule is compiled based on availability of appropriately trained staff, procedure room availability and breach dates within the admissions office and patients booked accordingly.

The patient's journey from referral for an EPS/RFA to transfer back to the referring team following the procedure care will be documented in the UHL green care pathway Procedures booklet according to the UHL EPS/RFA SOP.

Pre Admission (Elective Process)

The following information is required to be completed at pre admission.

- Patient name.
- Identification numbers, i.e. NHS number with or without hospital number.
- Date of birth.
- Gender.
- Planned procedure.
- Procedural Urgency.
- Site and side of procedure if relevant.
- Source of patient, e.g. OPC, ward or radial lounge.
- Significant comorbidities.

- Allergies, e.g. to latex or iodine.
- Infection risk – including MRSA, CRO, Covid 19 and any additional swabs identified.
- Type of anaesthesia, ensure procedure has been listed correctly for Anaesthetist and ODP cover – contact admissions team if not, check if family problems with GA
- Antiarrhythmic medications, start, stop, hold prior to procedure
- Check compliance to anticoagulation if taking
    - INR check for warfarin patients (weekly therapeutic INRs between 2.5-3.5 (near test) for 4 weeks prior to procedure & minimum of 6 weeks of warfarin)
    - DOAC compliance (minimum of 3 weeks with no omitted doses or GI upset).
- Decision made and advice given regarding pre-procedure anticoagulation regime.
- Blood tests including FBC, U&E for all patients + INR if on warfarin to be undertaken or arranged prior to admission, results to be checked
- Score 3 and above Group & Save blood test to be taken.
- UHL nursing risk assessments to be completed
- Body mass index (Bariatric assessment if indicated)
- Documentation of any pre-procedure concerns discussed with the consultant team.
- Suitability for Day case unit, day same day discharge/ overnight stay required.
- Procedure and recovery education including lifestyle factors and driving regulations.

The following information is taken from the Cath lab operating schedule and arranged the week before the procedure by Cardiac Physiologists and confirmed with the relevant Consultant

- Mapping system required, any specific equipment
- To confirm details of the procedure further details of the intended procedure may be obtained from the clinic letter available on relevant electronic system

Patient preparation / Pre-procedural checklist:

For elective cases the patient will have been given a Patient information leaflet prior to arriving in the department. This will either be sent in the post, given out in the outpatient clinic or at the pre-admission appointment.

The following information is required to be completed prior to the patient being collected for their procedure (Inpatients)/prior to admission to the Cardiology Department (day cases) and must be documented in the EPS/Radio Frequency Ablation or AF Ablation pathway which includes.

- Any non-standard equipment requirements documented
- All aspects of the WHO compliant pre-procedure checklist in the EPS/RFA pathway will be completed.
- Full medical documentation
- Check compliance to anticoagulation if taking (as above)
- EWS score
- Consent / Confirmation
- IV Access
- Dentures
- Communication requirements

- Blood results checked
- The correct wristband has been applied check details with patient where able including allergy and proposed procedure and correct medical notes are available.

The following NBM guidelines should be adhered to:-

- TCI 7.30am – Nil food from midnight and water until 6am
- TCI 11am – Breakfast before 7am and water until 9am
- For GA cases – Nil food 6 hours prior and water up to 2 hours pre procedure

Procedural Bloods:

Procedural bloods should be taken at pre admission and be current within 3 months. If the patient is having telephone preadmission recent blood results will be sourced or requested and results checked. Cath lab should be contacted at earliest possibility if no bloods/out of date and discussed with operator. The following to be taken if not available:

- U&E, FBC required for all patients.
- INR if on anticoagulation (warfarin only)
- TFT & LFT if on Amiodarone
- Group and save (in preadmission for left sided procedures, score 3 and above, 2nd sample to be taken on admission for score 4 / 5 patients)

The patient's bloods to be within the following parameters:
Hb = 110 - 180
Plts =140 – 400
UE's = K 3.5-5.3 mmols/L
INR = 2.5 - 3.5 (near test), 2 - 3.5 (venous) stable for required period prior to procedure
OR at discretion of cardiologist, documented on the handover sheet.
MDT to inform cardiologist as soon as any abnormalities noted.

Workforce – staffing requirements:

Roles and responsibilities of the clinical team

This procedure requires the following team (minimum) to be present throughout the procedure:

1 Cardiologist, 1 Radiographer, 2 Catheter Lab registered nurses, 1 Cardiac Physiologist, (2nd specialist cardiac physiologist or company support for 3D mapping cases) If GA x1 Anaesthetist and x1 ODP or PAA

For training purposes where available x1 Specialist Registrar/ EP fellow

The procedure will be scheduled by the Angiocatheter Suite clinical co-ordinator as per the departmental

policy. The clinical team have the responsibility to have an on-going assessment of the patients medical care needs in pre, peri and post procedural phases and to act accordingly.

- **Cardiologist** - Has the overall responsibility for the procedure and ensures that the team safety brief is completed at 08:30 in the morning and prior to the afternoon list, and that it is conducted by a suitably trained member of the medical team (either consultant or appropriately-trained specialist registrar). The consultant will act as IRMER practitioner and will be responsible for the documentation of the procedure by a suitably trained medical member of the team. They will ensure documentation includes any further treatment, discharge plans, appropriate prescription (including all verbal orders).

- **Specialist Registrar/ EP fellow – appropriately trained (as determined by the consultant responsible for procedure)** The specialist registrar will work in accordance with their level of training and under the supervision of the lead consultant, who may delegate them appropriate roles.

- **Operator** – This may be a consultant or appropriately trained specialist registrar. Lead safer surgery checklist and ensuring that the team are aware of nonstandard steps/procedures/equipment needs for the case. When no scrub nurse is available, they will be responsible for sterility of equipment and the appropriate preparation of the patient's procedural site. Prepares equipment for the procedure following company / consultant training. The operator will also be responsible for checking the integrity of all equipment that is removed from the patient and will sign the accountable items sheet. The operator will prepare equipment for the procedure following appropriate practice. They will work as part of the MDT to ensure safety of patient, ensuring the safer surgery check list is completed and complete all database requirements. Document the procedure indicating any further treatment or discharge plans, ensuring appropriate prescription including all verbal orders.

- **Radiographer -** Responsibility for IRMER compliance ensuring radiation safety of patients and staff, ensuring correct patient imaging with optimum settings. Reinforcing staff compliance with the local rules providing support and advice in order to comply. Completing the imaging process ensuring images are archived, dose information is recorded, reporting and addressing any radiation concerns. Working as part of the MDT to ensure safety of patient, ensuring the safer surgery check list is completed.

- **Cath lab circulating nurse -** The circulating nurse will have responsibility for caring for the patient in the procedure room, ensuring adequate handover within the MDT team. Where possible/required preparation of the procedure trolley may be performed by the circulating nurse adopting the scrub nurse role at the beginning of the procedure to encourage flow and continuity adhering to the following responsibilities:

    - Responsible for sterility of equipment and the appropriate preparation of the patient procedure site.
    - Instigate accountable items counts and ensure safe handling of sharps
    - Work as part of the MDT to ensure patient safety and completion of the safer surgery checklist

- Once the procedure has started at an appropriate time (after transeptal puncture) in agreement with the operator de-scrub and act as the circulating nurse for the duration of the procedure

The circulating nurse will support the sedation nurse in monitoring vital signs for the duration of the procedure.

- Where heparin is required the circulating nurse will be responsible for administration and monitoring of ACT. Post heparin an ACT should be checked after 10 minutes and every 20-30 minutes (or operator preference) depending on ACT results and administering top up heparin bolus's as required.
- Ensure patient comfort and notify operator if more sedations/ analgesics are required.
- Liaising with co-ordinator for any changes to the list and escalating care requirements
- Responsible along with the operator at the end of the procedure for checking accountable items and completing count sheet
- Working as part of the MDT to ensure patient safety and all relevant documentation is completed and signed at the end of procedure.
- Used stock should be scanned using appropriate stock system to ensure replacements are ordered liaising with the stock management company if any concerns

- **Cath lab nurse responsible for sedation –** Responsible for

  - Assist in careful positioning of the patient including protection of pressure areas using the appropriate equipment i.e. Repose boots and gel pads.
  - Check patent IV access at the beginning of the procedure. Check cannula site, extension lines and ensure access site are checked at regular intervals.
  - Assessing any contributing co-morbidities that may influence safe sedation i.e. age, weight, renal function and any breathing condition's. Any concerns to be raised to the operator at the beginning of the procedure
  - All essential monitoring (outlined on page 8) is in place at the beginning of the procedure and in full working order.
  - Ensure 'sign in' is completed before any sedation is administered.
  - Administering all sedation/analgesia IV medications.
  - Monitoring all vital signs and acting appropriately informing operator of any changes or concerns and documenting every 5 minutes on the cath lab sedation chart.
  - Maintain close proximity to patient head end to enable safe observation of vital signs and safety, whilst also following IRMER rules and regulations.
  - At the end of the procedure confirm operator has signed all relevant paperwork including drug chart, CD register and verbal order policy.
  - Along with the circulating nurse check pressure areas are intact at the end and document accordingly.

- **Cardiac Physiologist –** Responsible for
  - Setting up of any additional equipment required for procedure, such as 3D mapping system or

cryo console;

- Monitoring of electrophysiology, connecting ECG monitoring, setting up pressure transducer(s) and attaching patches for 3D mapping systems if required for procedure.
- Keeping a procedure log throughout the case on the EP recording system and informing the operator of any arrhythmias, induced or spontaneous.
- Check any intracardiac devices/ pacemakers and defibrillator and ensure they are programmed appropriately, therapy disabled and pacing parameters adjusted as per guidelines/ consultant advice.
- Supporting operators with intracardiac signals, pacing and advanced mapping equipment/ Cryo console.
- Use radiofrequency ablator to deliver energy to target ablation site under direction of the operator
- Attach Defibrillator patches for complex procedures and deliver DC shock/ cardioversion if indicated/ instructed by operator.
- Complete EP database at end of procedure to comply with audit requirements.
- Working as part of the MDT to ensure safety of patient, ensuring the safer surgery check list is completed.

Documentation and pre-procedural checks

- All mandatory pre-procedural patient information will be documented within the green EPS/RFA pathway and confirmed as being handed over at the required information handover points in the patient journey.
- Procedural consent will be completed by the cardiology clinician (Specialist Registrar, EP fellow or Advanced Nurse Practitioner with appropriate training in the consent process for electrophysiology) prior to the procedure and before transfer to the lab, and can only be completed if the patient has had prior access to and read the Patient Information Leaflet (For inpatients, the Patient Information Leaflet will be given at the time of being added to waiting list).
- The pre-procedure checklist must be completed on the ward by the nurse responsible for the patient's care on the day of procedure. Pre-procedure issues must be resolved prior to transfer to Cath Lab - The cardiologist must be informed of any abnormalities in blood results (especially results and compliance to anticoagulation if applicable) or medical concerns.
- The patient will not be admitted to the procedural area unless the pre-procedure checklist is completed (embedded within the green EPS/RFA pathway) and the patient is consented for the procedure.
- If GA patient will require the Safer surgery checklist.
- Each patient will get signed in to the department at a formal documented handover from the clinical team.
- The patient will only proceed through each step of the procedure once each safety check is documented as being complete.
- Each patient will get signed in to the department at a formal documented handover from the clinical

team.

Team Safety Briefing:

- Prior to commencement of any procedural list a 'Safety Briefing' must take place with all members of the team.
- The purpose of the brief is to discuss the sessions' list schedule of planned interventional procedures.
- The area used should be quiet and free from interruptions.
- The brief may be led by any designated member of the team
- All staff members of the procedural team are named for the session and roles identified and written on the white board.
- Any changes in order, cancellation or addition N.B. The procedural list will be updated on the master board in reception as changes happen, the co-ordinator will inform the room team and operator of any changes as they happen verbally. Wards will be informed of cancellations and additions as soon as possible.
- Post procedural care discussed and any additional requirements highlighted i.e. monitored bed
- Any nonstandard steps identified and plans put in place if necessary.
- Equipment checks should have already been performed and any issues highlighted, and actions put in place to address if required.
- Procedures involving implantation of devices must be discussed and availability of devices verified for.
- Procedures involving low usage devices e.g. some diagnostic / ablation catheters, ILR following negative EP study, urgent pacemaker must be discussed and availability of devices verified
- The first patient will only be sent for once the team brief has been completed

Sign In:

Sign in and Time Out are safety processes whereby the prompts on the checklist ensure verification of the correct patient, procedure.

- Conscious and coherent patients should actively be encouraged to participate in these processes.
- The Sign in verification process must be performed by two team members, one will be the Radiographer and the other will also be involved in the procedure.
- The questions will be undertaken verbally in a clear, precise and audible tone, with the patient.
- The process must have both the two's checkers full attention to confirm sign in. No other task should be undertaken until this is completed.
- No sedation should be given until this process is completed.

- For emergency cases where the patient is not able to communicate, identification can be taken from transferring team and the wrist band.

Time Out:

Time out must be undertaken with all the team present and everyone must engage and give their full attention

- The steps on the checklist must be led by a trained Healthcare professional in a clear and audible manner.
- All Team members must 'stop and pause' whilst the checklist questions are asked and responded to, hence this part of the safety process is known as 'time out'.
- If there is an interruption, the 'time out' must be suspended and recommenced.
- Every team member is valuable and should feel comfortable and at ease to raise any questions or concerns they have relating to the case at this time.
- The patient should once again be included where possible in the time out.
- Team members must not enter or leave the procedural room during this time
- The checklist in the pathway should be completed and signed by the nurse

Sign Out:

Sign Out when the procedure is completed

All patients who have undergone an interventional procedure must undergo safety checks at the end of the procedure before leaving the procedural room.

- Team members who are present at the end of the procedure should not leave the room until this is completed and verified as correct. (Any member of staff leaving the case before it is completed must handover to an equivalent member of staff).
- The nominated Healthcare professional leading time out will request that all the team is present and ask the team to 'stop and pause'.
- The set questions on the designated section of the Checklist are then directed to the appropriate team member/s, who will verbally respond to the questions being asked.
- Implant/device insertion logs and securing of stickers must be confirmed.
- The procedure will be documented in the Procedure booklet / Discharge letter and at a later date a formal report will be available on CRIS/ relevant electronic system and in the notes.
- Finally prior to transfer to the recovery/discharge area the team will review any key plans or concerns for the handover.
- The procedure nurse must complete adequate patient handover to the recovery/discharge area.
- The 'Sign Out' sheet is then signed by a registered healthcare professional and retained in the patient's notes as evidence of completion.

Restricted Use of Open Systems

The Glenfield angio pack has been designed to restrict the use of open systems and mitigate against the risk of these and will form the basis of the equipment used. Any other equipment should be assessed by the operator and must comply with these restrictions and mitigations as below.

- All drugs will be drawn into syringes and labelled with syringe labels that are supplied in the Glenfield Specification angio pack.
- Flush bowl is prelabelled 'not for injection'
- Contrast will be administered via the manifold supplied

Patient Monitoring:

The patient will be monitored as below throughout the procedure:

Type of monitoring	**Frequency of monitoring**
BP	Continuously throughout procedure.
Respiratory Rate	Continuously throughout procedure.
O2 saturations	Continuously throughout procedure.
Capnography	Continuously throughout procedure.
ECG	Continuously throughout procedure.
Sedation score	Continuously throughout procedure refer to Cath lab sedation score guidance.
Temp	Not routinely
CBG	Not routinely/As required
ACT	5-10 minutes post heparin administration/

	every 30 minutes afterwards/ more frequent as indicated/ directed by the operator

All observations will be recorded every 5 minutes on catheter lab sedation chart

Stock management / expiry dates:

All stock required for the procedure is checked prior to the start of the procedure, further stock control is undertaken via the Althea stock management system T-CON within the lab. Any shortages will be identified and alternatives provided.

Equipment handover to operator during procedures (not including initial trolley set-up):

- Operator asks for the relevant equipment and the lab staff will repeat the request verbally.
- The lab staff locates the equipment and offers it, packaged, for the operator to check.
- Primary operator confirms verbally that the packaged item is the intended item for use.
- Packaging opened and equipment placed on the operator trolley.
- Immediately before using any equipment the operator checks visually that it is the intended equipment.

Prevention of retained Foreign Objects:

Procedures will be adhered to within the Management of Surgical Swabs, Instruments, Needles and Accountable Items policy (June 2020).

A count of all sharps used during the procedure must be documented on the countable items record sheet. This must be completed at the start of the case and maintained throughout, adding any further items to the count. This count must be completed by a scrubbed practitioner and another member of the cath lab team. No waste must leave the room during the case until the final count has been made. At the end of the case the count must be repeated and checked against the countable items record. If there are any discrepancies the waste bags will be searched and the missing item must be found before the patient leaves the room.

The operator must check guidewires, cardiac catheters, sheath, and any balloons/ invasive equipment on removal to ensure integrity and confirm nothing left, fractured off or embolised. They should sign to verify all catheters; guidewires are intact at the end of the procedure, if there is any doubt as to the integrity of a guidewire or any piece of equipment this should be raised immediately and X Ray screening implemented as appropriate.

Radiography:

All procedures are undertaken with compliance with IRR 17, IR(ME)R 17 and Local Rules.
Cardiology IRMER procedures are in place as per IRMER legislation.
IRMER training relevant to each role is undertaken at induction and audited.

Handover:

Specific details for handover to the recovery and subsequently ward staff required are as follows:

- If an increased level of post procedure monitoring and / or higher dependency area other than standard ward bed or radial lounge is required this will be clearly documented. This will also include a plan for overnight stay or inpatient admission for continuing care following elective procedures if required.
- The access device (i.e. Arterial Sheath, Fem Stop, Z suture) removal instructions and removal time will be clearly documented.
- Antiplatelet/ Anticoagulant therapy regime is communicated to the ward team either via the discharge letter or patient pathway.
- Any changes to current medication will be documented and prescribed by the operator.
- All medication administered or commenced during the procedure will be handed over to the receiving nurse with an infusion chart as required. Any issues identified during the procedure will be clearly documented and handed over to ensure continuity of care.
- Pressure area care will be clearly handed over and any issues identified.

Team Debrief:

A team debrief should occur at the end of all procedure sessions as per WHO checklist which should include:

- The purpose of the debrief is to discuss the sessions' list and identify what went well and what did not.
- The area used should be quiet and free from interruptions.
- The brief may be led by any designated member of the team.
- Any problems with equipment identified and the plan for rectification confirmed. Any long term problem identified to the co-ordinator and the appropriate team
- Identify areas for improvement and escalate to senior team with plan for any change required.

Post-procedural aftercare:

Post-procedural care

- A post procedure care plan will be identified by the operator in the room and documented clearly in the green EPS/RFA pathway patient pathway.
- All transeptal cases require an ECHO in the procedure room prior to leaving the department
- Patients who had a trans-septal puncture will require at least 2 hours observation on a cardiac monitor with frequent check of vital signs every 15 minutes. A prolonged period of monitoring might be required depending on the complexity of the case and specific operator requirements.
- Aftercare of the patient is formally documented with any additional specific aftercare instructions

documented in the relevant section in the procedure booklet including any medication changes/requirements.

- The patient will be formally handed back to the clinical team (documented handover back to ward team for inpatients/patients to be recovered on a ward; discharge letter completed and sent home with the patient for patients recovered in the department and subsequently discharged as day case).

Discharge:

- The patient will be formally handed back to the clinical team with a documented handover back to ward team for inpatients/patients to be recovered on a ward;
- A discharge letter should be completed using the electronic letter system and sent home with the patient for patients recovered in the department and subsequently discharged as day case.
- Post procedure follow up will be arranged as per Consultant request

Governance and Audit:

Safety incidents in this area include;

- Wrong site surgery
- Retained foreign object post-procedure
- Wrong prosthesis or implant

All incidents and near misses will be reported on Datix and appropriate actions taken.
This document will be audited periodically and will be reviewed alongside any changes to the service and practice. The service is under regular review at the Mortality and Morbidity audit meetings.
Regular IRMER compliance audits are undertaken.

Training:

- Angiocatheter Suite Nursing competencies
- Access and knowledge of massive haemorrhage protocol
- Scrub training competences signed off and completed
- Sedation training undertaken in house
- IRMER relevant training
- HELM mandatory training
- Equipment competency training
- Cardiac Physiologist competencies
- Consent / delegated consent training
- ILS competent

Documentation:

All documentation from admission to discharge should be recorded on the standard UHL related admission documents including

- Green EPS/RFA or AF ablation green care pathway
- Angiocatheter Suite specific UHL Safer procedure checklist/safer surgery
- Patient property disclaimer
- NHS consent form
- UHL Bed rail risk assessment (if required)
- UHL Falls risk assessment (if required)
- UHL Adult in patient medication record / EPMA available
- UHL Pressure area assessment (if required)

In addition to this, patient procedure details will be recorded onto the DCS Intellect data management system by the Clinical Audit team with information provided by the Cardiac Physiology team. Patients will also be attended onto CRIS system by the Radiography team

References to other standards, alerts and procedures:

National Safety Standards for Invasive Procedures, NHS England 2015:
https://www.england.nhs.uk/patientsafety/wp-content/uploads/sites/32/2015/09/natssips-safety-standards.pdf
UHL Safer Surgery Policy: B40/2010
UHL Consent to Treatment or Examination Policy A16/2002
UHL Delegated Consent Policy B10/2013
Surgical Swabs, Instruments, Needles and Accountable Items UHL Policy B35/2007
Sedation UHL Policy B10/2005
UHL Cardiology Guideline C268/2016
UHL Policy on Surgical Safety Standards for Invasive Procedures B31/2016
Ionising Radiation Safety UHL Policy B26/2019
The Ionising Radiation (Medical Exposure) Regulations 2017
The Ionising Radiation Regulations 2017

Further References
Cath Lab Local Rules
Cardiology IRMER procedures

Appendix 1: Cath Lab Team Brief/Debrief

Catheter Lab Team Brief Checklist

This checklist must be filed in the Cath lab Brief / Debrief folder

NHS University Hospitals of Leicester NHS Trust

Caring at its best

STOP THE LINE

Cath Lab: .....

Consultant: .....

Date: .....

Time Started: .....

1. Team brief:

At the beginning of the list to discuss all cases, led by the theatre team leader.

In emergency theatre –full handover to be given by transferring registrar on patient arrival.

- ❑ All team members have introduced themselves by name & role.
- ❑ Issues resolved from last debrief.
- ❑ Anaesthetic machine & drugs checked and ready.
- ❑ Any latex allergies or infection risk.
- ❑ Confirm list order.
- ❑ Dosimetery for all staff.

Patient name, Number and Procedure	Team Input									Anaesthetic Input
	Correct Ward	Equipment Available	Essential Imaging checked & available	Outstanding tests /VTE	Procedure concerns / requirements	Implants / prostheses checked & available	Antibiotics required	Blood Products required	Post procedure care	Anaesthetic plan: Patient specific concerns
1.										
2.										
3.										
4.										
5.										

Staff present:

❑ Nurse	❑ Con Cardiologist
❑ HCA / CLA	❑ Con Anaesthetist
❑ Scrub Practitioner	❑ Trainee Anaesthetist
❑ ODP	❑ Rep
❑ Student	❑ Radiographer
❑ Trainee Cardiologist	❑ Cardiac Physiologist

Team Signature:	Print Name:	Designation:
	Date: / /	Time:

Catheter Lab Team De-Brief Checklist

This checklist must be filed in the Cath Lab Brief / Debrief folder

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STOP THE LINE

Cath Lab: .....

Consultant: .....

Date: .....

Time Started: .....

❑ Post op debrief performed	Yes ☐ No ☐
❑ Any issues arising that need to be addressed	Yes ☐ No ☐
❑ If 'Yes', is Debrief Action Log complete (below)	
❑ All 'Stop the Line' issues recorded and Datixed	

Issue	Action Required	Responsible Person	Due Date	Completed?

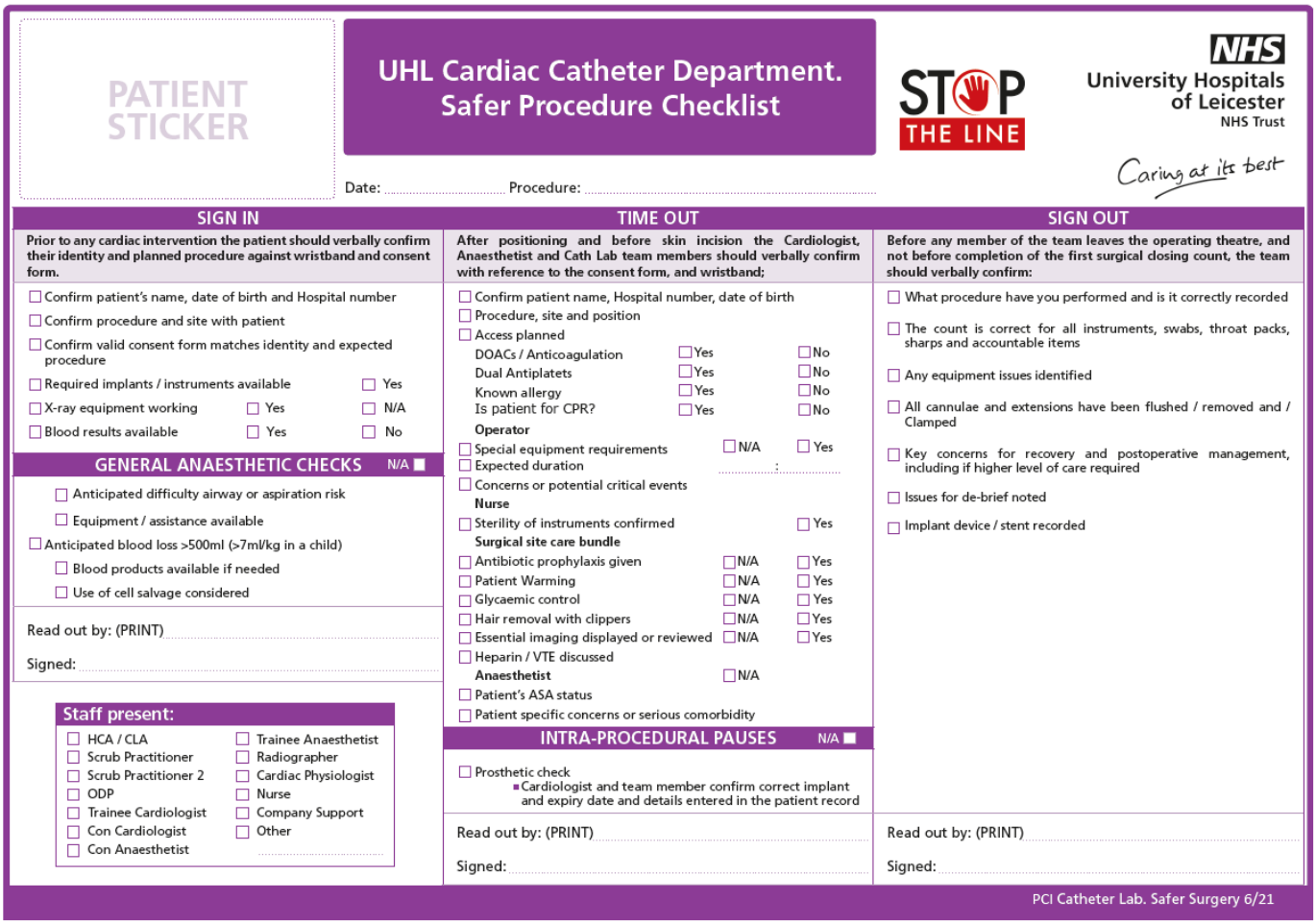
Achievements and what went well?	Could we have made this list more productive?

Staff present:

❑ Nurse	❑ Con Cardiologist
❑ HCA / CLA	❑ Con Anaesthetist
❑ Scrub Practitioner	❑ Trainee Anaesthetist
❑ ODP	❑ Rep
❑ Student	❑ Radiographer
❑ Trainee Cardiologist	❑ Cardiac Physiologist

Team Signature:	Print Name:	Designation:
	Date: / /	Time:

Appendix 2: Cath Lab Safer Procedure Checklist



PATIENT STICKER

UHL Cardiac Catheter Department. Safer Procedure Checklist

STOP THE LINE

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Caring at its best

Date: ..... Procedure: .....

SIGN IN

Prior to any cardiac intervention the patient should verbally confirm their identity and planned procedure against wristband and consent form.

- ☐ Confirm patient's name, date of birth and Hospital number
- ☐ Confirm procedure and site with patient
- ☐ Confirm valid consent form matches identity and expected procedure
- ☐ Required implants / instruments available ☐ Yes
- ☐ X-ray equipment working ☐ Yes ☐ N/A
- ☐ Blood results available ☐ Yes ☐ No

GENERAL ANAESTHETIC CHECKS N/A ☐

- ☐ Anticipated difficulty airway or aspiration risk
- ☐ Equipment / assistance available
- ☐ Anticipated blood loss >500ml (>7ml/kg in a child)
- ☐ Blood products available if needed
- ☐ Use of cell salvage considered

Read out by: (PRINT) .....

Signed: .....

Staff present:

- ☐ HCA / CLA
- ☐ Scrub Practitioner
- ☐ Scrub Practitioner 2
- ☐ ODP
- ☐ Trainee Cardiologist
- ☐ Con Cardiologist
- ☐ Con Anaesthetist
- ☐ Trainee Anaesthetist
- ☐ Radiographer
- ☐ Cardiac Physiologist
- ☐ Nurse
- ☐ Company Support
- ☐ Other .....

TIME OUT

After positioning and before skin incision the Cardiologist, Anaesthetist and Cath Lab team members should verbally confirm with reference to the consent form, and wristband;

- ☐ Confirm patient name, Hospital number, date of birth
- ☐ Procedure, site and position
- ☐ Access planned
- DOACs / Anticoagulation ☐ Yes ☐ No
- Dual Antiplatets ☐ Yes ☐ No
- Known allergy ☐ Yes ☐ No
- Is patient for CPR? ☐ Yes ☐ No

Operator

- ☐ Special equipment requirements ☐ N/A ☐ Yes
- ☐ Expected duration .....:.....
- ☐ Concerns or potential critical events

Nurse

- ☐ Sterility of instruments confirmed ☐ Yes

Surgical site care bundle

- ☐ Antibiotic prophylaxis given ☐ N/A ☐ Yes
- ☐ Patient Warming ☐ N/A ☐ Yes
- ☐ Glycaemic control ☐ N/A ☐ Yes
- ☐ Hair removal with clippers ☐ N/A ☐ Yes
- ☐ Essential imaging displayed or reviewed ☐ N/A ☐ Yes
- ☐ Heparin / VTE discussed

Anaesthetist ☐ N/A

- ☐ Patient's ASA status
- ☐ Patient specific concerns or serious comorbidity

INTRA-PROCEDURAL PAUSES N/A ☐

- ☐ Prosthetic check
  - Cardiologist and team member confirm correct implant and expiry date and details entered in the patient record

Read out by: (PRINT) .....

Signed: .....

SIGN OUT

Before any member of the team leaves the operating theatre, and not before completion of the first surgical closing count, the team should verbally confirm:

- ☐ What procedure have you performed and is it correctly recorded
- ☐ The count is correct for all instruments, swabs, throat packs, sharps and accountable items
- ☐ Any equipment issues identified
- ☐ All cannulae and extensions have been flushed / removed and / Clamped
- ☐ Key concerns for recovery and postoperative management, including if higher level of care required
- ☐ Issues for de-brief noted
- ☐ Implant device / stent recorded

Read out by: (PRINT) .....

Signed: .....

PCI Catheter Lab. Safer Surgery 6/21

Appendix 3: Integrated Care Pathway for EPS/RFA

EPS / Ablation / VT Stim
Pathway Score ____

University Hospitals of Leicester NHS Trust
Glenfield Hospital

Patient label	**Estimated Date of Discharge:** **Pacemaker / ICD / Reveal / Single / Dual / CRT** **Model:** **GA N / Y Reason:** **Warfarin Y / N DOAC Y / N** **Date Started:** **Compliance: Y / N** **MRSA Status Negative / Positive** **Allergies:**
	TCI on :
Likes to be called:	

ADMISSION DETAILS	Cons:
Preadmission Date: T / C	**Diabetic: Y / N**
2nd Preadmission Date: T / C	**Renal Failure: Y / N** **(IV Fluids required pre procedure: Y / N)**
Patient Contact Number: Mobile no: Email address:	**Disclaimer Form Signed: Y / N**
Next of Kin: **Relationship:**	**Contact Number:**
Language Spoken:	**Interpreter Required: Y / N**
Age:	**Ethnic Group:**

SOCIAL CIRCUMSTANCES

Lives alone: □ Lives with Spouse/Partner: □ Lives with dependants: □ Other: □
Other Relevant Information:
Anticipated Discharge Destination: Home / Other: **Ambulance Transport: Y / N**
Aware Overnight Stay Required: Y / N
Advised not to drive for: N/A 2 days Other please state:

Print Name:	Signature:

T = Telephone Preadmission / C= Clinic Preadmission

Patient Label

Employment Status: (circle as appropriate)

Working (specify)	Not working due to illness
Student	Retired
Housewife / Husband	Unemployed

Specify Employment: .....

Advice given (please specify) .....

DETAILS OF HEART RHYTHM

Summary

ECG:	Date	ECG:	Date

Symptoms:

Chest pain	Shortness of Breath	Dizzy/light-headedness	Syncope	Palpitations	Lethargy

Shortness of Breath:

On exertion	At rest	During palpitation	Orthopnoea ___pillows	PND	Ankle swelling

Palpitations:

Frequency	Duration	Last episode	Associated symptoms	On & off set

Additional Symptoms

MEDICAL HISTORY (please specify)			
Hypertension	Y/N	EPS / Ablation / VT Stim Pathway Patient Label	
~~Hypotension~~	Y/N		
Hyperthyroid / Hypothyroid	Y/N		
MI / ACS	Y/N		
PCI / Stent	Y/N		
Angina	Y/N		
CABG	Y/N		
CVA / TIA	Y/N		
Valve Repair/ Replacement Tissue / Mechanical Y/N			
Diabetic	Y/N Type 1 / Type 2		
Peripheral vascular disease Y/N			
Asthma / COPD / other Y/N			
Epilepsy	Y/N		
TB / RHF	Y/N		
Recent infections (please specify) Y / N Treatment: Overnight stay in hospital abroad in last 12mths: Y / N CRO swabs & info sheet given to patient: Y / N			
Other illness / operations (please specify)			
Communication issues Y / N (please specify)			
Urinary / Bowel problems Y / N (please specify)			
Dietary Needs Y / N (please specify) Weight loss referral made to dietician / MECC Y / N / Declined			
Smoker:	Never Smoked	Ex Smoker	Still Smoking
Quantity per day……..		How long (yrs)……..	
Ex for yrs……		Previous quantity (per day) ……..…	
Referral to smoking cessation : Y / N / declined			
Alcohol:			
Yes	No	Units per week: ……Referral to alcohol liaison: Y / N / declined	

MEDICATION DETAILS
Current Medication: (please circle as appropriate)

Diabetic Medication Y / N

Diabetic medication advice leaflet given: Y / N	

Warfarin Y / N

Monitoring	Venous	Near test	Stable Y/N	
Site of monitoring	GH	LRI	LGH	GP
INR readings				
Warfarin Dose at Preadmission	____mgs daily			

DOAC

Please specify:	Start date:
Compliance: Y / N	Dose time:

Medication advice at preadmission

Last dose of _____

On _____

Last dose of _____

On _____

Patient Label	EPS / Ablation / VT Stim Pathway

OBSERVATIONS AND INVESTIGATIONS
Date Taken:

Blood Pressure:	**HR:**	**EWS Score:**	**Bloods Taken:** FBC U&E's INR LFT's TFT's Glucose Group & Save
SpO2: **RR:**	**Temp:**	**If score 3 or > please complete sepsis screening tool and attach to pathway**	**MRSA swabs** Nose Perineum Other..... **CRO swabs: Y / N**

PREADMISSION INFORMATION DATE:		Signature
Procedural information given, questions answered and risks of procedure answered	**Yes / No**	
Patient consented at clinic Consented in pre admission Risks discussed as per consent form	**Yes / No** **Yes / No** **Yes / No**	
Discharge advice given and planning commenced	**Yes / No**	
Stellisept and Bactroban given as per UHL Guidelines	**Yes / No**	
Bariatric risk assessment completed (Weight >120kgs / BMI >35) If >200kg discuss with Cath Lab radiography team	**Y / N / NA**	
VT Stim Only: ICD information discussed ICD booklet given	**Y / N / NA** **Y / N / NA**	

Insertion of Cannula (Affix Label Here) **Ensure this is filled in by the person inserting the Cannula**

EPS / ABLATION / VT Stim SCORE ____ Patient Name _____ S_____

PRE PROCEDURE CHECKLIST (Please complete **all sections** ticking box where appropriate)

Recent INR date / / .....

INR readings				
Bloods checked	FBC	U&E	Grp & Save	

CHECKLIST (Please ✓ box)	Tick or NA	Ward (Sig)	Tick or NA	A/C Lab (Sig)
Preadmission information read and checked with patient by admitting staff				
Discharge arrangements confirmed				
Current MRSA status known Negative / Positive If positive result – Cath. Lab informed				
Allergies(Please specify all)				
Weight..... Height.....				
"I confirm that I am not pregnant": (If appropriate)		Patient Signature_____		
B/P..... HR..... SpO2..... RR.....				
Waterlow score.....				
IDDM / NIDDM BM.....mmols				
All medication written in Prescription chart				
Check patient fasted (**4** hours food, **2** hours fluid) GA fasted **6** hours food		Food		Drink
GA patient Seen by anaesthetist (If applicable) If YES UHL Safer Surgery Theatre checklist completed				
Correct ID bracelet in place				
Allergy band in place (if applicable)				
Consent form signed on the ward				
ECG, medical notes with patient				
Prosthesis				
Dentures / Crowns		Full set/ top/ bottom		site of crowns
Hearing Aid in place (if applicable)		Left ear		Right ear
Make up / nail polish removed				
Implant site clipped				
Jewellery removed from neck and chest area				
Physical preparation completed (electrode adhesive)				
IV antibiotics given pre procedure on the ward as per protocol				

Signature ..... **Date** .....**Time** .....

EPS / ABLATION / VT Stim SCORE ___

Date: ..... **Time:** .....

PATIENT STICKER

1st Operator:
Assistant:
Procedure:

EPS / Ablation Coding

1 ☐ Elective ☐ Inpatient / Emergency

2 ☐ Atrial Fib ☐ Atrial Flutter ☐ NCT ☐ A Tachy ☐ VT ☐ Atrial Ectopics ☐ Vent Ectopics ☐ Screening

3 Co-Morbidities ☐ Hypertension ☐ Diabetes ☐ CVA ☐ Valvular Heart Disease ☐Thyroid disease ☐ Congenital heart

4 Procedure

☐ K57.1 - RFA of AV node
☐ K57.2 - RFA of conducting system
☐ K57.4 - RFA of Accessory Pathway
☐ K57.5 - RFA of Atrial wall NEC
☐ K58.2 - EPS / VT Stim
☐ K62.1 - RFA Pulm Vein to left atrium
☐ K62.2 - RFA Atrial wall for Atrial Flutter
☐ K62.3 - RFA for Atrial Flutter
☐ K65.4 - Transeptal puncture

Complex

☐ K57.6 - Ventricular wall
☐ K57.7 - RFA for Congenital heart malformation
☐ K58.6 - 3D Mapping of the heart

** Please circle as appropriate*

Left/right femoral artery sheath ..... No./Size
Left/right femoral vein sheaths ..... No./Size
Left/right subclavian/jugular vein sheath ..... No./Size

NURSE COMMENTS: .....

.....

.....

Nurse's Signature: ..... **Date:** .....

ACT results

Time	ACT	Time	ACT

Radiation Dose ..... **Screening time** .....

EPS (diagnostic)

Patient Label

Catheters Used:

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INSTRUCTIONS FOR WARD:

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Nurse/Doctor Signature: ..... **Date:** .....

DOCTOR'S COMMENTS / INSTRUCTIONS:

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Echo required post procedure YES [ ] NO [ ]

Doctor's Signature: ..... **Date:** .....

Recovery Information (* please circle)

Patient Label

* Chest Pain Anxiety Arrhythmias
Bleeding / Haematoma Other

Details:

.....
.....
.....
.....

NURSING

Immediate Post Procedure **Tick as completed:**

Femoral site(s) checked [.....]
Patient aware of need for 2 hours bedrest [.....]
Observations within patient's normal limits: [.....]
Pedal pulses present: Left Y/N Right Y/N [.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

Two Hours Post Procedure

Post-procedural information understood [.....]
Patient eating and drinking [.....]
ECG recorded [.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

Within Six Hours Post Procedure

Bedrest completed [.....]
Feet good colour and warm [.....]
Foot pulses present: Left Yes / No Right Yes / No [.....]
No haematoma, bruising, bleeding from groin [.....]
Passed Urine post procedure. [.....]

Warfarin given if patient is known to take warfarin routinely [.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

MEDICAL REVIEW POST PROCEDURE:

Patient Label

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SIGNATURE: .... **DATE:** ....

Patient Label

PRIOR TO DISCHARGE

Echo recorded

Comments:.....

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On Completion: SIGNATURE: ..... **DATE:** .....**TIME:** .....

Cardiac Rhythm Nurse	**Tick as completed:**
Discharge information given	[.....]
Anticoagulation regime reinforced	[.....]
Patient advised who to contact for advice.	[.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

NURSING: Prior to discharge	**Sign as completed:**
Femoral site checked, no complications present	[.....]
Pedal pulses present Left: Yes / No Right: Yes / No	[.....]
Results and treatment plan discussed by doctor.	[.....]
Discharge arrangements confirmed	[.....]
Patient copy of discharge letter given	[.....]
Discharge medication and information given	[.....]
Sick certificate given if necessary.	[.....]
Patient has all property for discharge.	[.....]
Discharge information reiterated/understood	[.....]
IV Cannula removed	[.....]
Discharged home Date: [.....] Time	[.....]

Discharge arrangements confirmed with patient,

patient signature: [.....	**Sign as completed:**
Outpatient appointment documented.	[.....]
GP copy of discharge letter sent.	[.....]
Patient to go to discharge lounge.	[.....]
Patient discharged home	[.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

Patient Label

Communication.....

Name (Printed)	Designation	Signature	Initials

Appendix 4: Integrated Care Pathway for AF ablation

AF Ablation Core Pathway
(PVI / WACA) Score ___

University Hospitals of Leicester NHS Trust
Glenfield Hospital

Estimated Date of Discharge:

Patient label	**Pacemaker / ICD / Bivent / Reveal** **Model:** **GA Y / N Reason:** **Warfarin Y / N Started:** **DOAC Y / N Started: Compliance Y / N** **Allergies:**
Likes to be called:	**TCI on :**

ADMISSION DETAILS Cons:

Preadmission Date: T / C	**MRSA Status Negative / Positive**
2nd Preadmission Date: T / C	**Diabetic: Y / N**
Patient Contact Number: Mobile no: Email address:	**Disclaimer Form Signed: Y / N**
Next of Kin: **Relationship:**	**Contact Number:**
Language Spoken:	**Interpreter Required: Y / N**
Age:	**Ethnic Group:**

SOCIAL CIRCUMSTANCES

Lives alone: □ Lives with Spouse/Partner: □ Lives with dependants: □ Other: □
Other Relevant Information:
Anticipated Discharge Destination: Home / Other: **Ambulance Transport: Y / N**
Aware Overnight Stay Required: Y / N
Advised not to drive for: N/A 2 days Other please state:

Print Name: Annie Geoghegan Diane Stevenson Sarah Roberts Angela Day Louise Kilbourn Isabel Blackburn James Kerslake Marnie Ward Anglea Dillon	Signature: Time: Date:

T = Telephone Preadmission C= Clinic Preadmission

Patient Label

Employment Status: (circle as appropriate)

Working (specify)	Not working due to illness
Student	Retired
Housewife / Husband	Unemployed

Specify Employment: .....

Advice given (please specify) .....

DETAILS OF HEART RHYTHM

Summary

ECG:	Date	ECG:	Date

Symptoms:

Chest pain	Dizzy/light-headedness	Syncope	Palpitations	Lethargy	Other	None

Shortness of Breath on exertion	Shortness of Breath at rest	Shortness of Breath during palpitation	Orthopnoea ___pillows	PND	Ankle swelling

Palpitations:

Frequency:	Duration:	Last episode:	Associated symptoms:	On & off set:
Daily No of episodes: ..... Weekly No of episodes: ..... Monthly No of episodes:				

Exacerbating Factors:

Exercise	Breathing	Movement	Posture	Stress	Eating	None

MEDICAL HISTORY (please specify)				Patient Label
Hypertension	Y/N			
Hypotension	Y/N			
MI / ACS	Y/N			
PCI / Stent	Y/N			
Angina	Y/N			
CABG	Y/N			
Stroke / TIA	Y/N			
Valve Repair/ Replacement Tissue / Mechanical Y/N				
Hyperthyroid / Hypothyroid Y/N				
Diabetic Y/N Type 1 / Type 2				
Renal Disease Y/N				
Peripheral vascular disease Y/N				
Asthma / COPD / other Y/N				
Epilepsy Y/N				
TB / RHF Y/N				
Recent infections (please specify) Treatment Y/N				
Overnight stay in hospital abroad in last 12mths Y / N CRO swabs & info sheet given to patient Y / N				
Chemotherapy / Haematological issues / Transplant / Immunosuppressant medication / HIV disease (please circle if relevant – if yes seek advice for Group and save form)				
Other illness / operations (please specify)				
Communication requirements Y/N (please specify)				
Urinary / Bowel requirements Y/N (please specify)				
Nutritional requirements Y/N Advice given Y/N Weight loss referral made to dietician / MECC Y / N				
Smoker:	Never Smoked	Ex Smoker	Still Smoking Smoking cessation referral Yes / No / Declined	
Quantity per day……..		How long (yrs)……..		
Ex for yrs……		Previous quantity (per day) ……..….		
Alcohol: Advice provided as per NICE guidelines				
Yes	No	Units per week: ……Alcohol Liaison Referral: Yes / No / Declined		

MEDICATION DETAILS
Current Medication: (please circle as appropriate)

Diabetic medication

Diabetic medication advice leaflet given: Y / N	

Warfarin

Monitoring	Venous	Near test	Stable Y/N		
Site of monitoring	GH	LRI	LGH	GP	Other
INR readings					
Warfarin Dose at Preadmission	____mgs daily				

DOAC

Please specify:	Start date:
Compliance: Y / N	Dose time:

Medication advice at preadmission

Last dose of: _____

On: _____

Last dose of: _____

On: _____

Patient Label	AF Ablation Core Pathway (PVI / WACA) Score ___

OBSERVATIONS AND INVESTIGATIONS			**Date Taken:**
Blood Pressure:	**Pulse:**	**EWS Score:**	**Bloods Taken:** FBC U&E's INR LFT's TFT's Glucose
SpO2: **RR:**	**Temp:**	**If score 3 or > please complete sepsis screening tool and attach to pathway**	Group & Save **CRO swabs**: Yes No N/A **MRSA swab**: Nose / Perineum Other:.....

PREADMISSION INFORMATION	Date:	Signature
Procedural information given and questions answered		
Patient consented at clinic **Y / N** Consented in pre admission **Y / N** Risks discussed as per consent form **Y / N**		
Discharge advice given and planning commenced		
Stellisept and Bactroban given as per UHL Guidelines		
Aware of transfer to a High Dependency Unit post procedure		
PROMS data completed **Y / N**		
Bariatric risk assessment completed **Y / N / NA** (Weight >120kgs / BMI >35) If >200kg discuss with Cath Lab radiography team		

Insertion of Cannula (Affix Label Here) **Ensure this is filled in by the person inserting the Cannula**

AF ABLATION (PVI / WACA) SCORE ____ Patient Name _____ S_____

PRE PROCEDURE CHECKLIST (Please complete **all sections** ticking box where appropriate

Recent INR date / / INR Result: .....

INR readings				
DOAC Compliance: Yes No				
Bloods checked	FBC	U&E	Grp & Save	

CHECKLIST (Please ✓ box)	Tick or NA	Ward (Sig)
Preadmission information read and checked with patient by admitting staff		
Discharge arrangements confirmed		
Current MRSA status known Negative / Positive If positive result – Cath. Lab informed		
Hospital admission in last 12 months outside Leicestershire or abroad		
Allergies(Please specify all)		
Weight..... Height.....		
"I confirm that I am not pregnant": (If appropriate)		Patient signature
B/P..... HR..... SpO2..... RR.....		
Waterlow score.....		
IDDM / NIDDM BM.....mmols		
All medication written in Prescription chart		
Check patient fasted (**4** hours food, **2** hours fluid) GA fasted **6** hours food		Food: Drink:
UHL Safer Surgery checklist completed		
GA patient Seen by anaesthetist (If applicable)		
Correct ID bracelet in place		
Allergy band in place (if applicable)		
Morning Medication checked		
Consent form signed on the ward		
ECG, medical notes with patient		
Prosthesis		
Dentures / Crowns		Full set/ top/ bottom
Hearing Aid in place (if applicable)		Left ear Right ear
Make up / nail polish removed		
Groins shaved		
Jewellery removed from neck and chest area		
Physical preparation completed		

Signature ..... **Date** .....**Time** .....

AF ABLATION (PVI / WACA) SCORE ___

Date: ..... **Time:** .....

PATIENT STICKER

1st Operator:
Assistant:
Procedure:

NURSING PROCEDURE INFORMATION

Room Nurse

Signature..... Name..... Initials.....

Check list conformation

Procedure: ..... Date: .....

Confirmed identity [ ] Confirmed wrist band [ ]

Consent form including Blood transfusion [ ]

Has check list information been confirmed [ ]

Sign.....

Approach / Sheaths (Please document all - circle)

Right Femoral Vein Size / Number: .....

Left Femoral Vein Size / Number: .....

Right / Left, Radial / Femoral Artery Size: .....

ACT / HEPARIN DOSAGE

Time	ACT	Heparin IU	Time	ACT	Heparin IU

Total heparin dose .....iu Time last administered .....

Chest pain: Yes / No Arrhythmias: Yes / No Sedation / analgesia: Yes /No

Details:.....

.....

.....

Total morphine ..... mg Total midazolam ..... mg

Radiation Dose ..... **Screening time** .....

EPS / Ablation Coding

1 ☐ Elective ☐ Inpatient / Emergency

2 ☐ Atrial Fib ☐ Atrial Flutter ☐ NCT ☐ A Tachy ☐ VT
☐ Atrial Ectopics ☐ Vent Ectopics ☐ Screening

3 Co-Morbidities ☐ Hypertension ☐ Diabetes ☐ CVA
☐ Valvular Heart Disease ☐Thyroid disease ☐ Congenital heart

4 Procedure

☐ K57.1 - RFA of AV node
☐ K57.2 - RFA of conducting system
☐ K57.4 - RFA of Accessory Pathway
☐ K57.5 - RFA of Atrial wall NEC
☐ K58.2 - EPS / VT Stim
☐ K62.1 - RFA Pulm Vein to left atrium
☐ K62.2 - RFA Atrial wall for Atrial Flutter
☐ K62.3 - RFA for Atrial Flutter
☐ K65.4 - Transeptal puncture

Patient Label

Complex

☐ K57.6 - Ventricular wall
☐ K57.7 - RFA for Congenital heart malformation
☐ K58.6 - 3D Mapping of the heart

DOCTOR'S COMMENTS / INSTRUCTIONS: .

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Prescribe Lansoprazole 30mg od for 6/52.....

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Echo required post procedure YES [ ] NO [ ]

Suitable for Nurse led F/U post 3 months YES [ ] NO [ ]

Doctor's Signature: ..... **Date:** .....

INSTRUCTIONS FOR WARD: NB See Anticoag treatment plan for AF ablation

Patient Label

.....

.....

.....

.....

.....

.....

.....

Nurse/Doctor Signature: ..... **Date:** .....

Sheath Removal

Manual pressure [ ] Angio-seal [ ]

Comments .....

Sheath to be removed by ward [ ] ACT due at .....

NBM [ ] Eat and drink [ ]

Post procedure check

Is procedure recorded correctly? [ ]

Is warfarin / heparin prescribed? [ ]

Is instrument count correct? [ ]

Have all samples been labelled? Yes / N/A

Any equipment issues reported? Yes / N/A

Blood transfusion cards completed and taken with patient Yes / N/A Ward: .....

Higher level of post operative care required? Yes / no Area required: .....

Signature: .....

Recovery Information (* please circle)

* **Chest Pain Anxiety Arrhythmias Bleeding / Haematoma Other**

Details: .....

Recovery EWS score:..... .....

(If systolic varies by 20mmHg from pre procedure then inform medical team)

Comments

.....

.....

.....

Recovery Nurse

Signature.....Name.....Initials.....

Patient Label

NURSING
Immediate Post Procedure

Tick as completed:

Femoral site(s) checked [.....]
Patient aware of need for 2 hours bedrest [.....]
Observations within patient's normal limits: [.....]
Pedal pulses present: Left Y/N Right Y/N [.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

Two Hours Post Procedure

Post-procedural information understood [.....]
Patient eating and drinking [.....]
ECG recorded [.....]
Observations completed ¼ hourly for the first 2 hours [.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

Within Six Hours Post Procedure

Bedrest completed [.....]
Feet good colour and warm [.....]
Foot pulses present: Left Yes / No Right Yes / No [.....]
Review Z suture removed [.....]
No haematoma, bruising, bleeding from groin [.....]
Passed Urine post procedure. [.....]
Warfarin / DOAC given
WARFARIN MUST NOT BE OMITTED WITHOUT CONSULTANT AUTHORISATION [.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

Anti coagulation Treatment Plan for AF ABLATION

Procedure to be undertaken on Warfarin or with alternative Anticoagulant

(DOAC = Direct Oral AntiCoagulant)

This template can be used for most warfarinised patients and those with known thrombophilia with the haemostasis thrombosis team

Patient Label

Pre procedure

- **Warfarin to be continued** pre procedure within the range of 2.5 – 3.5
- INR to be monitored either on the day before or day of the procedure via the patients usual testing method (near test or venous)
- If patient is taking a **DOAC**
- Rivaroxaban – consultant specific advice to be advised at pre adm
- Apixaban - consultant specific advice to be advised at pre adm
- Dabigatran consultant specific advice to be advised at pre adm

Post procedure

- Continue Warfarin at USUAL MAINTENANCE DOSE on day of procedure ensuring INR >2.0 after the procedure
- **Warfarin must not be omitted post procedure without Consultant authorisation**
- **Restart/Give Rivaroxaban, Dabigatran, Apixaban on the evening of the procedure**
- Contact the Cardiac Rhythm Team ext 3848 bleep 2674 / 2878 or page #6362 for discharge review and patient advice

Home

- INR 5 days post procedure
- Apply graduated elastic compression stockings until fully mobile.
- Maintain hydration and encourage early mobilisation where appropriate.
- Ensure follow up for this on discharge via online referral

Plan completed by: *Signature:* *Date:* *Designation*

Dr Stafford ***Prof Ng*** ***Dr Sandilands*** ***Dr Riyaz Somani***
Consultant Cardiologist & Electrophysiologists

AF Ablation Anticoagulation Guidelines
Date written May 2012 Date Approved: May 2012 by UHL Thrombosis Committee Date next review:

Written by Sue Armstrong Cardiac Rhythm Nurse Specialist, Dr Andre Ng Consultant Electrophysiologists, Dr Peter Stafford Consultant Electrophysiologists, Dr Alastair Sandilands Consultant Electrophysiologists Dr Sue Pavord Consultant Haematologist

MEDICAL REVIEW POST PROCEDURE:

Patient label

SIGNATURE: ……………………………………………… **DATE**: ……………………………

PRIOR TO DISCHARGE

Echo recorded

Comments:.....

.....

.....

.....

On Completion: SIGNATURE: ..... **DATE:** .....**TIME:** .....

Cardiac Rhythm Nurse	**Tick as completed:**
Discharge information given	[.....]
Anticoagulation regime reinforced	[.....]
Patient advised who to contact for advice.	[.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

NURSING: Prior to discharge	**Sign as completed:**
Femoral site checked, no complications present	[.....]
Pedal pulses present Left: Yes / No Right: Yes / No	[.....]
Results and treatment plan discussed by doctor.	[.....]
Discharge arrangements confirmed	[.....]
Patient copy of discharge letter given	[.....]
Discharge medication and information given	[.....]
Sick certificate given if necessary.	[.....]
Patient has all property for discharge.	[.....]
Discharge information reiterated/understood	[.....]
IV Cannula removed	[.....]
Discharged home Date: [.....] Time	[.....]

Discharge arrangements confirmed with patient,

Patient signature: .....

	Sign as completed:
Outpatient appointment documented.	[.....]
GP copy of discharge letter sent.	[.....]
Patient to go to discharge lounge.	[.....]
Patient discharged home	[.....]

On Completion:

SIGNATURE: ..... **DATE:** ..... **TIME:** .....

Patient Label

Communication.....

Name (Printed)	Designation	Signature	Initials

Appendix 5: Cath Lab EP accountable items checklist

Please Affix Patient Label Here	EP		Please Affix Pack Label Here
	Date:		
	Time:		
	Lab:		

Angio Pack						
Description	Pre Op	Additional				
Forceps Artery Mosquito Curved						
Scissors Sharp / Blunt 13cm						
Orange Hypodermic Needle						
Green Hypodermic Needle						
Pink Kimal Needle						
Filter Needle						
Scalpel No.15						
IV Spike						
Swab Gauze 10 x 10cm (5+5)						
Red Tags (1+1)						

Additional Items					
Description	Additional				
Transeptal Needle(s)					
Blunt Introducer Needle(s)					
Suture(s)					
Extra Swabs					
Extra Red Tag(s)					
Proglide(s)					

	Pre Op	Post Op
Checker 1		
Checker 2		

Appendix 6: Verbal Order Form

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Patient Sticker

Patients Weight .....

Known Allergies.....

Drugs and Fluids that can be given via The Verbal Order Policy during Electrophysiology Procedures

For use in The AC dept on.....(Date of Procedure)
Cross through and file in medical notes post procedure

Drug	Route	Dose Range
Adenosine	IV	6 – 12mg
Amiodarone	IV	150 – 300mg
Atropine	IV	300micrograms – 1mg
Chlorphenamine Maleate (Piriton)	IV	10mg
Cyclizine	IV	50mg
Diazepam	IV	1 – 10mgs
Flumazenil	IV	200 – 500micrograms
Furosemide	IV	20 – 100mg
Heparin	IV	70 – 100units/kg
Heparinised Saline	IV	500 - 2000mls
Hydrocortisone	IV	100 – 200mg
Isoprenaline Sulphate (2.25mg in 500ml Glucose 5%)	IV Bolus	4.5 – 9micrograms (1 – 2ml)
Isoprenaline Sulphate (2.25mg in 500ml Glucose 5%)	IV Infusion	67.5 – 270micrograms/kg (15 – 60mls/hr)
Metoclopramide	IV	10mg
Midazolam	IV	1 – 10mg
Morphine	IV	1 – 10mg
Naloxone Hydrochloride (Narcan)	IV	100 – 200micrograms
Niopam 340	IV	10 – 400mls
Oxygen	Via Mask	2 – 10L
Protamine Sulphate	IV	10mg
0.9% Sodium Chloride	IV	10 – 500mls
4% Glucose with 0.18% Sodium Chloride	IV	50 – 500mls
5% Glucose	IV	50 – 500mls
Gelatin (Volplex)	IV	500mls

All drugs given to be documented on drug chart as per Verbal order Policy

Fluids and Drugs prescribed by Name.....Date.....

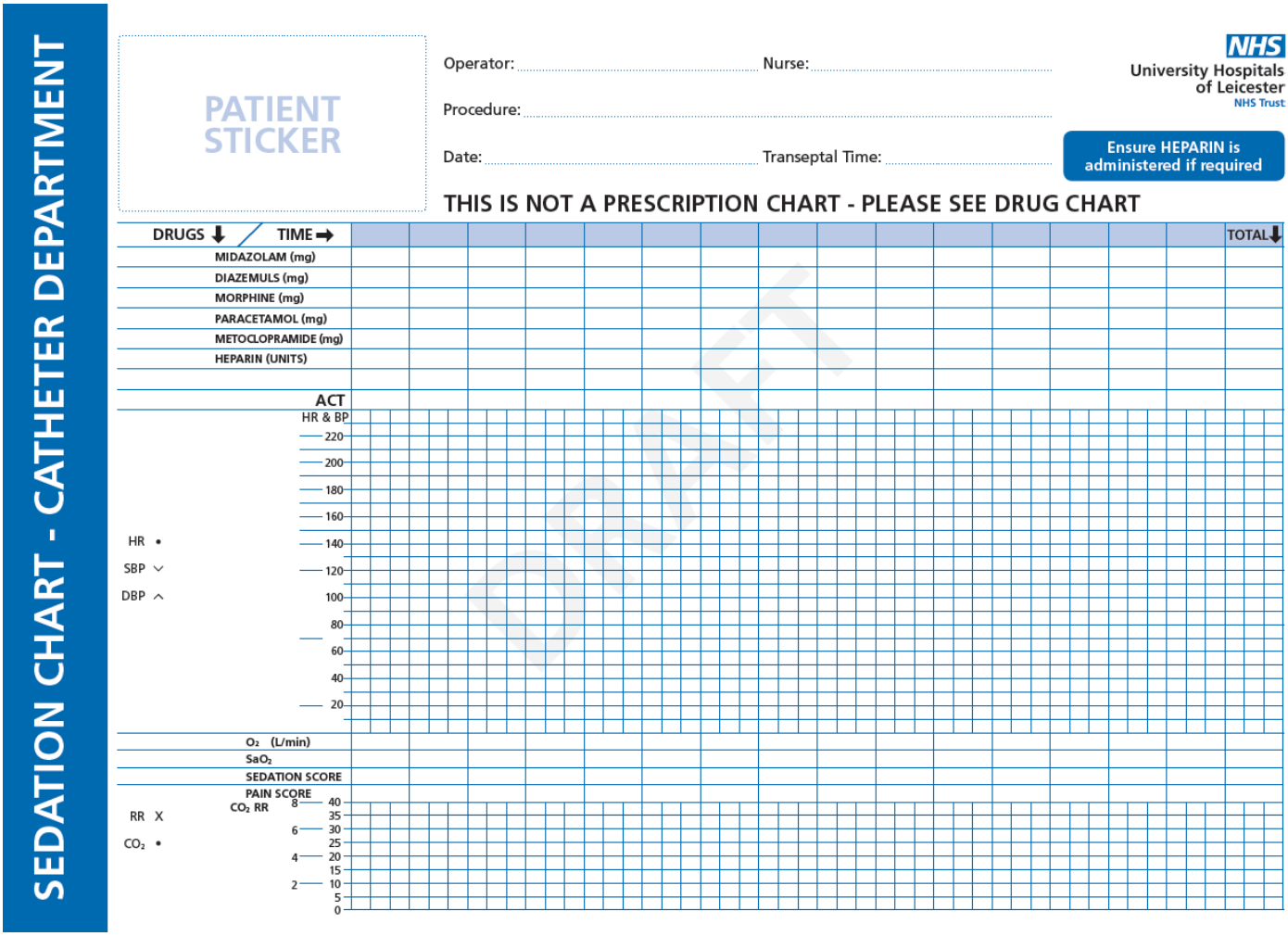
Signature.....

Cannula checked by Name ..... Date.....

Signature.....

Version 1 July 2010 - Review July 2012
Authors Mandy Lewis Sister - AC Dept. Maxine Reddin - Lead Pharmacist
Julia Todd – Matron Cardiology. Matthew Griffiths Senior Nurse Medicines Management

Appendix 7: Sedation observation chart



SEDATION CHART - CATHETER DEPARTMENT

PATIENT STICKER

Operator: ..... Nurse: .....

Procedure: .....

Date: ..... Transeptal Time: .....

NHS University Hospitals of Leicester NHS Trust

Ensure HEPARIN is administered if required

THIS IS NOT A PRESCRIPTION CHART - PLEASE SEE DRUG CHART

DRUGS ↓ / TIME → | TOTAL ↓

MIDAZOLAM (mg)
DIAZEMULS (mg)
MORPHINE (mg)
PARACETAMOL (mg)
METOCLOPRAMIDE (mg)
HEPARIN (UNITS)
ACT

HR & BP: 220, 200, 180, 160, 140, 120, 100, 80, 60, 40, 20

HR •
SBP ⌄
DBP ⌃

O_2 (L/min)
SaO_2
SEDATION SCORE
PAIN SCORE

CO_2 RR: 8, 6, 4, 2 — 40, 35, 30, 25, 20, 15, 10, 5, 0

RR X
CO_2 •

Appendix 8: Sedation score

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CATHETER DEPARTMENT

PROCEDURAL SEDATION SCORE

The following essential monitoring must be present prior to and during sedation administration:

Non-invasive BP – O2 saturations – ECG – Respiratory rate – CO2 monitoring

Sedation Level	Description	Clinical presentation	Intervention	SCORE
	✓ Alert/Eyes open spontaneously			0
LIGHT SEDATION	✓ May appear drowsy and speech impaired ✓ Eyes open spontaneously and responds appropriately to verbal commands ✓ Appears calm and relaxed	Respiratory and cardiovascular functions remain unaffected		1
MODERATE SEDATION	✓ Eyes open to verbal commands alone or when accompanied by tactile stimulation ✓ May appear confused	o2 desaturation on room air 88-92% Maintaining own airway	Apply o2 via facemask (titrate as required to maintain > 96%) Closely observe respiration rate	2
DEEP SEDATION	✓ Not easily stimulated will appear to be in a deep sleep only responding following repeated physical stimulation	Respiratory depression will occur, respiration rate will decrease and saturations will no longer be maintained and further oxygen will be required	INFORM ANAESTHETIC TRAINED STAFF Ensure reversal agents are available Consider using airway adjuncts such as guedel airway	3
UNCONSCIOUS	✓ Unarousable despite repeated physical stimulation	Inability to independently maintain ventilatory function, cardiovascular function may also be impaired	Patient will require immediate airway management If anaesthetist not already present dial 2222 for anaesthetic support Consider use of reversal agents if at imminent risk	4

IF FLUMAZINIL IS GIVEN A DATIX MUST BE COMPLETED

Appendix 9: SOP for conscious sedation

STANDARD OPERATING PROCEDURE FOR CONSCIOUS SEDATION MANAGEMENT IN THE CARDIAC CATHETER SUITE 2020

Elective patients undergoing Electrophysiology (Local Anaesthetic) procedures requiring Intravenous Benzodiazepines and Opioids.

In pre admission / assessment

Seen in pre-admission and assessed for suitability for Local Anaesthetic procedure and an assessment is made of their Sedation Risk.

Renal function blood sample taken (U&E)

On admission / medical assessment

Baseline observations particularly respiratory function (Respiratory rate / SaO_2)

Highlight any pre-existing sedation risk / respiratory issues such as Chronic Lung conditions / Sleep Apnoea / obesity.

Renal function should be reviewed (U&E taken in pre admission).

In the Cath Lab

Baseline observations are recorded in the department prior to any sedation being given

There are 2 nurses in the room, at least 1 of which must be immediate life support trained.

1 Nurse has sole responsibility for:

- Administration of sedation / analgesia following verbal prescription from the operator.
- Completion of catheter department sedation observation and monitoring chart, this includes monitoring of respiratory rate and capnography as well as close observation of pain levels and sedation score (see attachment).

Observations are continuously monitored and recorded every 5 minutes.

Any variations are reported to the operator.

Prior to the patient returning to a ward area observation should be close to baseline and sedation score 0-1

Use of Reversal Agents

The use of any reversal agent should be logged as a DATIX incident and the Catheter Department co ordinator should be informed.

Appendix 10: SOP for Post procedure PVI and Transeptal punctures

STANDARD OPERATING PROCEDURES FOLLOWING COMPLEX ABLATION PROCEDURES AND TRANSEPTAL PUNCTURES 2020

Elective patients for PVI will return to ward 32 if:

- The procedure was completed without complication
- The patient is awake and alert with stable observations
- They have had an ECHO in the cath lab to rule out effusion post procedure

If ECHO identifies any effusion the patient should be transferred to a monitored bed on CCU.

Once on ward 32 the patient will:

- Be placed on a bedside cardiac monitor for 4/6 hrs depending on operator requirements
- As this is bedside monitoring, a registered nurse should be designated to remain within the bay or side-room for the monitoring period – if there are 2 patients being monitored in the same bay it is acceptable for one nurse to monitor both patients.
- Have quarter hourly observations for 2 hours. Including heart rate, blood pressure, respiratory rate and saturations
- Complete hourly observations for the remainder of the monitoring period i.e. at 2 hours, 3 hours and 4 hours.
- Observations should then be 4 hourly until discharge or if overnight.
- Have their access site assessed on return to the ward and prior to patient being able to sit up

Escalate any raised EWS score in the normal manner i.e. via the junior doctor – noting the baseline Blood Pressure (during / post procedure) which may be lower due to sedation or anaesthetic.

If systolic BP less than 80 mmHg or has fallen by more than 20 mmHg on 2 sets of observations the ward team to contact the on-call Registrar on Bleep 2584. If no response, please contact Cath Lab co-ordinator on Extension 3347 who will contact the operator for support.

If no complications during the first 2 hours of post procedure observation, the patient can be reduced to 1 hourly then 4 hourly observations.

After 4 or 6 hours (according to the consultant) the patient can be removed from the cardiac monitor and plans for discharge followed.