

IN-PATIENT PREOPERATIVE PLANNING AND OPTIMISATION GUIDANCE

Information booklet for Cardiology staff

Cardiac Surgery Unit, BHSCT

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INTRODUCTION

The aim of this information booklet is to help cardiologists and cardiology ward staff understand the referral process and appropriate pre-operative management of patients undergoing in-patient cardiac surgery in Northern Ireland.

The overall time an in-patient has to wait for surgery can be reduced by careful optimisation of the patient prior to transfer, with reference to the guidelines included and by good communication with the surgeon and cardiac surgery waiting list office (WLO).

The guidance included will up continuously updated and the most update versions can be downloaded from the resources section of our unit web site by following the link below.

<http://belfasttrust-cardiacsurgery.hscni.net/about-cardiac-surgery/location/>

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1. WHO SHOULD BE REFERRED FOR IN-PATIENT CARDIAC SURGERY

The following criteria for referral for in-patient cardiac surgery have previously been agreed by the Revascularisation Clinical Advisory Group of the Cardiac Services Network:

- Acute Coronary Syndrome with ischaemic symptoms
- Acute Coronary Syndrome with ST changes while in hospital
- Acute Coronary Syndrome with significant anatomy i.e. >70% LMS with occluded RCA disease
- patient on the out-patient surgery list, re-admitted with ischaemic symptoms
- patient on IABP
- Valvular Heart Disease with Severe Aortic Stenosis with CCF
- Valvular Heart Disease with Mitral Valve Disease with unresolving CCF

It is recommended that ALL patients referred for in-patient should be presented at MDM. If a patient does not fall under the above criteria but a consultant cardiologist feels they need to remain in hospital for clinical reasons until surgery, it is recommended that the patient is presented at MDM.

2. HOW TO REFER A PATIENT FOR IN-PATIENT CARDIAC SURGERY

2.1. ELECTRONIC WHITEBOARD (EWB)

All referrals for in-patient cardiac surgery must be made to the Cardiac Surgery Waiting List Office via the Electronic Whiteboard. This can be accessed via the following link

<https://nww.networkreferrals.co.uk/>

2.2. MDM

It is recommended that all in-patients are discussed at one of the 3 multidisciplinary heart team meetings held each week.

- Tuesdays at 1:30 pm, Altnagelvin and Ulster Hospital Video MDM, Trainee Room, Ground Floor, West Wing, RVH Wednesday at 1pm, Craigavon Area Hospital Video MDM, Trainee Room, Ground Floor, West Wing, RVH

- Friday at 2pm, BHSCT/Regional MDM, Conference Room, Cath Lab, Level 5, RVH

The Video MDMs are accessed by dialling 5053 on standard videoconferencing units which takes the user to a virtual meeting room. Although the Tuesday and Wednesday MDMs are primarily with cardiologists from outside Belfast, to aid the management of in-patients, any BHSCT patient may be presented within time constraints. There are 2 surgeons assigned to each MDM session. If the MDM outcome is to refer for cardiac surgery, the Electronic Whiteboard Referral (EWB) referral should be made immediately after the meeting. It is important to note that the patient is not officially referred for surgery until a EWB referral is received. Although patients can be referred for MDM discussion via NIECR by the cardiologist who performs the angiogram, it is the responsibility of the cardiologist managing the patient in their base hospital, e.g. LVH or SWAH, to complete the EWB referral for surgery.

If an EWB referral is completed before discussion of a patient at MDM, it should be noted in the comment section of the EWB referral that the patient is scheduled for discussion at MDM and the date specified.

Patients should be referred for MDM discussion by filling in their details on NIECR. Ideally, this should be done by the managing consultant as after discussion they will receive an action plan detailing the outcome as a message when they log in to NIECR. It is best practice that the case is presented by a doctor who knows the patient; however, if this not possible, providing adequate clinical information is included in the referral the patient will be discussed. The nominated chairperson of each session will decide if adequate clinical information to permit meaningful discussion has been included. If not, they may advise that the case is re-referred with the additional information required.

2.3. MDM Outcome

The action plan from MDM will indicate which of the following will apply:

- 1.** The patient can be scheduled for surgery prior to being seen by the surgeon – this should be the norm if there are no significant medical problems that would affect surgery. In this case the patient is considered and accepted at the MDM (pending consultation with the surgeon, e.g. to ensure fully informed consent) and the clock starts once whiteboard referral completed.

2. The patient needs to be seen by surgeon before being accepted, and hence, scheduled for surgery – this may be necessary if there are significant co-morbidities that would affect the decision to proceed to surgery. In this case the clock starts once the whiteboard referral is completed AND the patient has been seen and accepted for surgery. In some instances, further investigations may be required before patient can be accepted.

2.4. EMERGENCY SURGERY

If emergency surgery is thought to be necessary, the Consultant Cardiac Surgeon or Registrar on-call should be contacted via CSICU on 02890633500. The on-call rota has a different surgeon on each day and, as there is not a 'surgeon of the week' system, the on-call surgeon may be operating. Therefore, if the on-call surgeon does not respond, contact CSICU again who will supply alternative name and number.

2.5. MANAGEMENT OF PATIENTS BETWEEN ACCEPTANCE AND SURGERY

The following indicates the Consultant Surgeon Cover for Management of Patient referrals and Waiting List Patients

Outside of working hours:

- Urgent management decisions should be made by Consultant Cardiac Surgeon on call

During working hours:

- All MDMs are joint, so if the surgeon a particular patient has been referred to is unavailable due to leave etc. the other surgeon present at the time of MDM discussion should manage the case until he returns. They will therefore be available for consultation, and if urgent surgery required, will be scheduled for this. If the 2nd MDM surgeon is unavailable due to leave etc. the surgeon on-call should be consulted.

For patients already on surgeon's waiting lists who might not have been presented at MDM the following buddy arrangement will apply:

Mr MacGowan ↔ *Mr Nzewi*

Mr Jones ↔ *Mr Robb (Locum) or Mr
Ahmed (Locum)*

Mr Jeganathan ↔ *Mr Austin*

Mr Sidhu ↔ *Mr Graham*

2.6. REQUESTING A SECOND OPINION

If a patient is turned down for surgery, and the consultant cardiologist still wants surgery to be considered then:

- If the patient had not been discussed at an MDM and is turned down by the surgeon, then the consultant cardiologist should discuss further with that surgeon. No other surgeon should be involved by the cardiologist or WLO at this stage. If agreement is not reached between the Consultant Cardiologist and Cardiac Surgeon, then the case should be presented at an MDM with both present.
- If the patient had been discussed at an MDM and the consensus of the MDM was that surgery should not be performed, then if a second opinion is desired, the patient should be presented again by that Consultant Cardiologist at a further MDM.

2.7. REQUESTING AN ANAESTHETIC OPINION

If an anaesthetic opinion is required, the consultant surgeon who the patient has been referred to, will liaise with the consultant anaesthetist and discuss the reason for the request. The consultant anaesthetist will advise how they will assess the patient, e.g. at pre-assessment clinic, via videoconference, outpatient clinic.

2.8. ASSESSMENT OF IN-PATIENTS BY VIDEOCONFERENCING

This service has recently been introduced after a successful pilot. To set up an assessment, Paul Gibson in the WLO (Telephone 02890639508) will liaise with the consultant surgeon and the ward staff. On appropriate videoconferencing equipment dial 5053 which will connect to a cardiac surgery virtual meeting room. The patient should be accompanied by a

junior doctor (e.g. to assess conduits for CABG) attendance by a relative and nursing staff is encouraged.

2.9. OUTPATIENT CLINIC ASSESSMENTS OF IN-PATIENTS

In more complex cases it may still be necessary for the patient to be assessed at an outpatient clinic before acceptance for surgery, particularly if the in-patient is deemed high risk. The purpose of this visit is to discuss consent issues such as what the surgery involves, risks and benefits, potential alternatives to surgery, and what will happen if no surgery is performed.

If the surgeon needs to see the in-patient at his outpatient clinic, the WLO will inform the referring hospital of the date and time of appointment. If the patient is medically fit and accepted for surgery, the nurse scheduler will attempt to schedule the patient quickly for surgery to compensate for any delay.

We fully understand the staffing and other difficulties for referring hospitals that this may cause and, therefore, these attendances will be limited to higher risk or more complex cases.

3. WAITING TIMES FOR IN-PATIENT CARDIAC SURGERY

A target maximum waiting time of 28 days for in-patients waiting for cardiac surgery in Northern Ireland had been agreed with the Public Health Agency several years ago. It has been agreed that waiting times will be measured against a performance target of 7 working days for acute admissions once a patient is confirmed as medically fit for surgery. To achieve this, the following will be required: adequate resources for cardiac surgery, timely referral of the patient to cardiac surgery by the managing cardiologists, optimal management of the patient's medical condition pre-operatively and good communication between the cardiology ward and the cardiac surgery waiting list office.

The target waiting time of 7 working days is for "routine" in-patients, e.g. CABG, AVR+/- CABG, MVR, once the patient is medically fit for surgery and that all relevant pre-operative investigations have been completed. The target of 7 working days is to allow time for medications such as antiplatelet agents to be stopped prior to surgery as per guidelines.

As “Complex” in-patients e.g. redo surgery or major aortic work usually requires all day operating lists, they are not included in the 7 working day target.

The clock starts when patients are both referred on Electronic Whiteboard AND accepted for surgery.

Once accepted if there are medical problems e.g. hyponatraemia, infection or routine investigations such as blood tests incomplete, the patient will be suspended on the in-patient waiting list. Patients should only be suspended if the condition or lack of test result is significant enough to preclude surgery. The reason for suspension will be recorded and will be open to scrutiny.

4. WHEN IS THE IN-PATIENT DEEMED FIT AND READY FOR SURGERY

Fit for surgery

- There is no clinical or biochemical evidence of active sepsis
- No acute hyponatraemia
- Normal Chest x-ray on the current admission

Ready for surgery

- Patient clinically fit as above
- Anti-platelet agents and anticoagulants have been stopped for the time period specified in current guidelines (As communicated by the WLO – see appendix 3)

Ideally, anti-platelets (other than aspirin) should be stopped for 7 days and INR < 1.5 unless clinical condition or coronary anatomy necessitates otherwise. This will have been determined by surgeon who will advise at time of acceptance at MDM or will be communicated via WLO.

5. PRE-OPERATIVE INVESTIGATIONS

The following is a guide as to what pre-operative investigations are essential in preparation for in-patient surgery.

5.1. BLOOD SAMPLES

The following bloods must be performed at the time of referral for cardiac surgery and repeated on the day before transfer for cardiac surgery and more frequently if clinically indicated.

- FBP
- U+E
- CRP
- LFT
- Coagulation Screen
- Iron Profile
- INR – if on warfarin
- HbA1c – on all diabetic patients
- TFT – only on patients with known thyroid dysfunction

It is essential that abnormal blood results are investigated/treated promptly by cardiology team to avoid delays in patients transferring for surgery, e.g. anaemia, hyponatraemia, sepsis, acute renal dysfunction etc. (Please refer to appendices for recommended management of hyponatraemia and anaemia)

5.2. CORONARY ANGIOGRAM

Coronary Angiogram is required for all patients over the age of 45 who are being referred for cardiac surgery. The in-patient referral cannot be processed until the images of the angiogram are available to view by the consultant cardiac surgeon.

5.3. CARDIAC MRI

The decision to do a cardiac MRI should be made at MDM.

5.4. CAROTID DOPPLERS

Following an internal audit the indications for investigation of carotid artery disease have been revised. The following criteria have been agreed by all consultant cardiac surgeons as indications for carotid duplex ultrasound of carotid arteries is required if a patient meets any of following criteria:

- Carotid bruit
- History of TIA/CVA
- Presence of other peripheral vascular disease (e.g. intermittent claudication or history of abdominal aortic aneurysm)
- Note that previous guidelines included Age 75 years or above and Left main stem coronary artery disease. These are no longer routine indications for investigation in the absence of the indications listed above.

If carotid duplex is unavailable in the referring hospital, the patient should be referred for CT/MRA imaging of carotid arteries

5.5. Chest X-Ray

Chest x-ray must be performed on the current admission and repeated if clinically indicated.

5.6. DENTAL

It is essential that all patients awaiting cardiac surgery involving implants (e.g. valves) have a dental assessment preoperatively. In addition, all other patients with poor dental health will require a dental assessment and necessary treatment preoperatively. Patients will not be scheduled for surgery within 5 days of dental extractions to allow the socket to heal.

If a patient requires dental assessment it is essential that this is arranged at the time of referral to avoid unnecessary delays in the patient being scheduled for surgery.

5.7. ECHO

Trans Thoracic Echo (TTE) is advised for all patients referred for cardiac surgery.

Transoesophageal Echo (TOE) is only required if requested specifically by the surgeon via the WLO.

5.8. MSSU

Urinalysis should be carried out on all patients at time of referral.

- If protein, blood or leucocytes indicated, please send MSSU sample.
- If bacteriuria is present and the patient symptomatic, they should be treated after a MSSU culture.
- If bacteriuria is present and the patient is asymptomatic, only treat if patient is scheduled to receive an implant, e.g. prosthetic valve or aortic graft.
- Urine screen for CPE to be performed on all cardiology **RVH in-patients** pre-operatively.

5.9. PFTS

Spirometry required on all patients at time of referral for cardiac surgery. If FEV1 and FVC are > 70% predicted and chest x-ray (and CT scan, if done for another reason) show normal lung fields without overexpansion, Transfer Factor (DLCO) measurement is not required.

OR

PFTs must be performed if history of COPD, asthma, smoking, recent chest infection, or patient symptomatic.

5.10. SWABS

- MRSA swabs (nasal and groin/or perineum) to be performed on ALL patients at time of referral. If a patient has a MRSA positive swab, they must be treated with nasal bactroban TID, for 5 days pre-operatively, and with body wash (octenisan, stellisept, or oilatum plus) OD for 7 days pre-operatively.
- MSSA swab (nasal) on ALL patients referred for valve surgery – to be performed at time of referral. If a patient is MSSA positive, they must be treated with nasal bactroban, TID, for 5 days pre-operatively.
- Swab any open wounds.
- CPE swab –(rectal swab) to be performed on all cardiology **RVH in-patients** pre-operatively

Please inform the waiting list office if the patient has a known history of MRSA, or has a MRSA positive swab on screening.

6. CARDIAC SURGERY OUTSIDE NORTHERN IRELAND

There may be an opportunity for a patient to have their surgery carried out in the Independent Sector (IS) if funding is available. The provider currently used is the Blackrock Clinic (BRC) in Dublin although this is subject to change. In-patients are only offered surgery in the IS if it will enable them to get their surgery sooner. If an in-patient is suitable, and clinically stable, to travel outside of Northern Ireland for surgery, and the patient is agreeable, this should be indicated on the EWB referral in the 'comments' section. There may be some occasions where for clinical reasons the consultant cardiac surgeon feels it more appropriate that the patient to remain in Belfast for their surgery.

If it has been agreed that a patient is being referred to the BRC, the IS administrator in the WLO will forward all relevant clinical information to BRC for consideration of surgery. If BRC have accepted the patient for surgery, their Nurse Scheduler will contact the cardiology team to give transfer details including, date of surgery and instructions for stopping medications (BRC nurse scheduler contact details can be found in the directory section). When the transfer date to BRC is known, patient transport with St John's Ambulance should be booked. If a patient requires cardiac monitoring, and if St John's Ambulance cannot provide this, transport should be booked with Paramedics.

IF A PATIENT IS TRANSFERRING OUTSIDE NORTHERN IRELAND FOR THEIR CARDIAC SURGERY, IT IS ESSENTIAL THAT CARDIOLOGY STAFF THE LOCAL CARDIAC REHABILITATION TEAM OF THE DATE OF TRANSFER

7. PRIVATE PATIENTS

If an in-patient has private health insurance and wishes to use this for cardiac surgery the WLO should be notified. It is important to note that private health insurance will not enable the patient to have their surgery any sooner as an in-patient. All in-patients are scheduled for surgery in chronological order unless clinical urgency indicates otherwise, regardless of whether they are NHS or private.

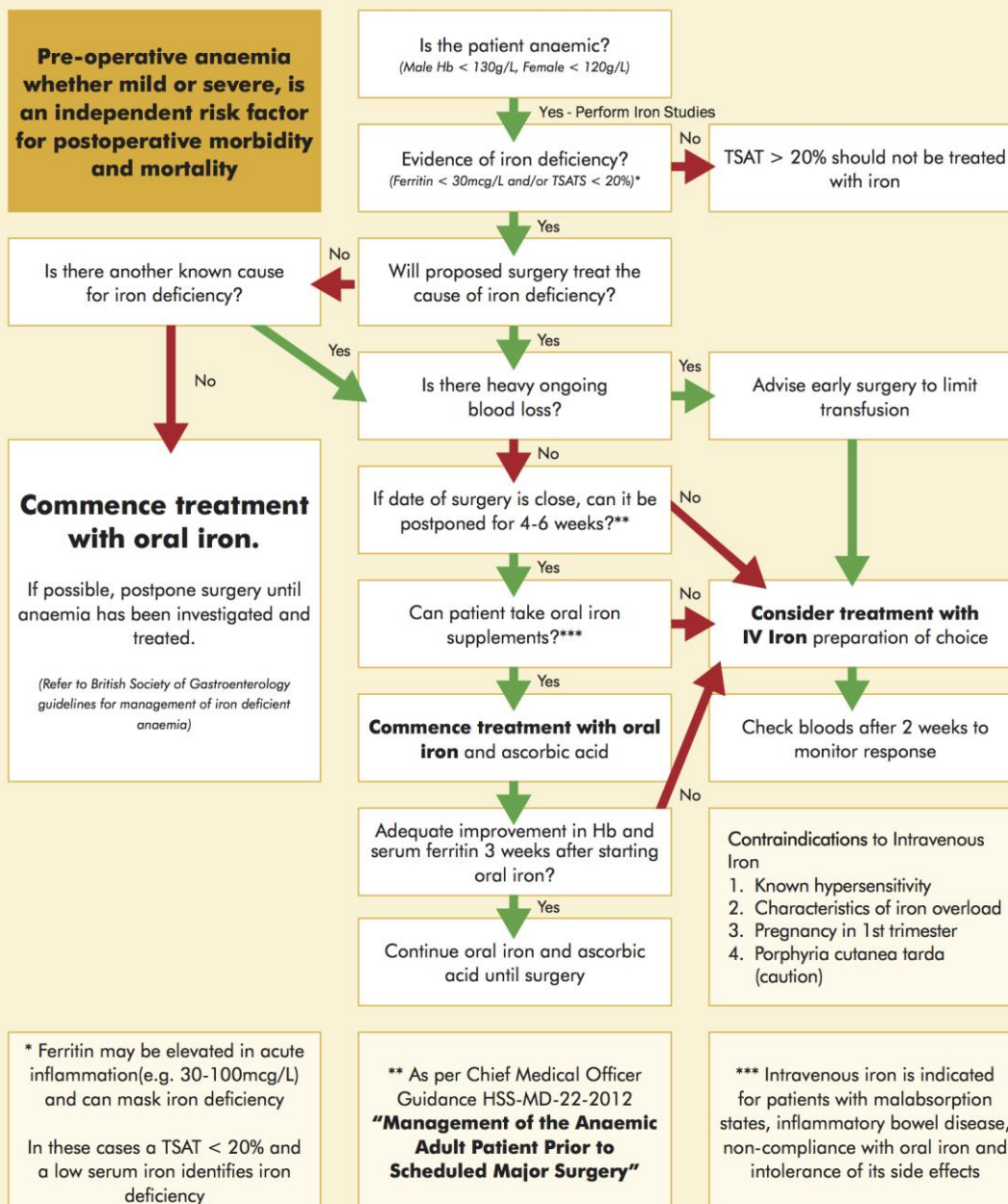
8. TAVI REFERRALS FROM CARDIOLOGISTS

If it is felt that an in-patient should be considered for TAVI, the cardiologist should refer the patient for general MDM discussion via NIECR. If the outcome from the MDM is 'patient for TAVI assessment', the chairman of the meeting can forward it directly onto TAVI MDM on NIECR without the patient's details having to be re-entered. If an in-patient has not been discussed at the general MDM and it is thought that TAVI rather than surgical AVR is the best option, then the patient should be discussed directly with one of the TAVI cardiologists (Dr Spence, Dr Manoharan, or Dr Owens).

APPENDICES

Appendix 1 – IRON DEFICIENCY ANAEMIA GUIDANCE

Northern Ireland Transfusion Committee Iron Deficiency Anaemia Guidance for Preassessment Clinics



Iron Deficiency Anaemia should always be treated even if surgery is not indicated

Appendix 2 – MANAGEMENT OF HYPONATRAEMIA

- Hyponatraemia is relatively common in hospitalised patients.
- It can be classified as acute (developing over less than 48 hours) or chronic,
 - mild (Na 130 - 134 mmol/l),
 - moderate (Na 125 - 129) or
 - profound (Na <125).
- The aetiology should be sought in all cases. A review of parenteral fluid administration and medication history is relevant.
- Hyponatraemia is usually only of clinical perioperative significance when the serum osmolality is low (hypotonic hyponatraemia), <275mOsm/kg.

<u>TYPE</u>	<u>VALUE</u>	<u>RECOMMENDATION</u>
PROFOUND HYPONATRAEMIA	<125	Requires urgent management
MODERATE HYPONATRAEMIA	125-129	increases the risk of surgery and should be treated prior to surgery
MILD HYPONATRAEMIA	>130	should be treated if possible, but is unlikely to delay surgery

Appendix 3 - MEDICATIONS

DRUG	WHEN TO STOP PRE-OP (incl. of day of surgery)	NOTES
ASPIRIN	5 days	If in-patient or significant LMS disease, remain on aspirin
CLOPIDOGREL	7 days	
PRASUGREL	5 days	
TICAGRELOR	7 days	
DABIGATRAN	2 -4 days	If renal dysfunction, need to stop 5 days preop (never give clexane same day as drug)
APIXABAN	2 days	If renal dysfunction, need to stop drug longer but stop at least 2 days preop
RIVAROXABAN	2 days	If renal dysfunction liaise with pharmacist, but stop at least 2 days preop
PERSANTIN/DIPYRIDAMOL	24 hours	
ASASANTAN	7 days	
CILOSTAZOL	1-2 days	
WARFARIN	5 days	BRIDGING PROTOCOL – if agreed by Surgeon
LIXIANA/EDOXYBAN	24 hours	Reduced clearance in renal dysfunction
METHOTREXATE	assess on individual basis	Liaise with prescriber
ACE INHIBITORS	consider stopping 48hrs prior to surgery	On surgeon's request
STEROIDS	assess on individual basis	If Addison's disease, remain on steroids
HRT	if oestrogen based stop 4 weeks pre op	
IMMUNOSUPPRESSANTS FOR RA	2-4 weeks	Liaise with physician reason for being on drug

Appendix 4 - RELEVANT CONTACTS

	JOB TITLE	EMAIL CONTACT	TELEPHONE CONTACT/HOURS OF WORK
Aileen Cassidy	Cardiothoracic nurse practitioner/ Scheduler	Aileen.cassidy@belfasttrust.hscni.net	02890636540/0771014 5062 (Mon-Wed, Friday 9-5)
Aine McCormick	Nurse Scheduler	aine.mccormick@belfasttrust.hscni.net	02890636540/0782514 6866 (Mon – Fri 9-5)
Paul Gibson	In-patient Navigator/MDT coordinator	Paul.gibson@belfasttrust.hscni.net	02890639508 (Mon – Fri 8-4)
Tina McCarthy	Cardiac Surgery elective referral coordinator	Tina.mccarthy@belfasttrust.hscni.net	02890636541 (Mon-Wed 8:30-1.30, Thurs 8.30 – 4, Fri 8.30 --5)
Joleen Watson	Independent sector administrator		02890636542 (Mon-Fri 8-4)
Ward 5A	Cardiothoracic ward		02890633222/637258/32355
CSICU/HDU			02890633500/ 02890632020
Mr Graham	Consultant cardiothoracic surgeon	Elaine.wilson@belfasttrust.hscni.net	02890633345
Mr MacGowan	Consultant cardiac surgeon	Fiona.oconnor@belfasttrust.hscni.net	02890632077
Mr Jones Mr Nzewi	Consultant cardiothoracic surgeon	Sharon.bellew@belfasttrust.hscni.net Lorraine.gould@belfasttrust.hscni.net	02890636544
Mr Sidhu	Consultant cardiothoracic surgeon	Sinead.taylor@belfasttrust.hscni.net	02890632775
Mr Jeganathan	Consultant cardiothoracic surgeon	Fiona.oconnor@belfasttrust.hscni.net	02890632077
Mr Austin/ Mr Robb/Mr Ahmed	Consultant cardiac surgeon	Jeanette.hunter@belfasttrust.hscni.net ciaraf.murray@belfasttrust.hscni.net	02890633831
Grace Murphy	Blackrock Clinic Nurse Scheduler	Grace.Murphy@blackrock-clinic.com	00353872178876

Appendix 5 - CARDIAC SURGERY IN-PATIENT PREOPERATIVE CHECKLIST

PATIENT NAME:
H&C:
REFERRING WARD/HOSPITAL:

	ON REFERRAL (DATE)	1 DAY PRIOR TRANSFER FOR SURGERY (DATE)	COMMENTS
ANGIOGRAM (all patients >45 yrs)			
ECHO (all patients)			
CXR			
CAROTID DOPPLER (as per criteria)			
PFT (DLCO required if FEV1 + FVC <70%)			
FBP			
U+E			
LFT			
CRP			
COAG SCREEN			
IRON PROFILE			
HbA1c (all diabetic patients)			
TFT (if known thyroid dysfunction)			
URINALYSIS			
MSSU			
NASAL SWAB - MRSA (all patients)			
THROAT SWAB - MRSA (all patients)			
NASAL SWAB - MSSA (all valve patients)			
RECTAL SWAB – CPE (inpatients RVH only)			
URINE SAMPLE – CPE (inpatients RVH only)			
DENTAL REVIEW (all implants, e.g. valves)			

- **ALL ABNORMAL BLOOD/MICROBIOLOGY RESULTS MUST BE INVESTIGATED AND TREATED PROMPTLY TO AVOID UNDUE DELAYS IN PATIENTS TRANSFERRING FOR SURGERY. PLEASE COMMUNICATE THESE RESULTS WITH THE WAITING LIST OFFICE.**

PLEASE SEND A COPY OF TEST RESULTS TO WLO AT TIME OF REFERRAL AND UPDATED RESULTS 1 DAY PRIOR TO TRANSFER TO ROYAL VICTORIA HOSPITAL FOR SURGERY.