

## GUIDELINE ON THE ELECTIVE SURGICAL MAXIMUM BLOOD ORDERING SCHEDULE (MSBOS)

### 0 INTRODUCTION

#### 0.1. Scope and purpose

These guidelines are intended to specify the number of units of blood routinely crossmatched for common elective surgical procedures, in order to reduce unnecessary crossmatching; increase availability of blood for those who need it and ensure the laboratory has adequate notice, where possible, of patients with antibodies.

#### 0.2. Responsibilities

0.2.1. These guidelines mainly apply to medical staff who request red cell concentrate for elective surgical procedures.

#### 0.3. Abbreviations

0.3.1.	CMV	Cytomegalovirus
0.3.2.	ROTS	Record of Transfusion Support
0.3.3.	G & S	Group and screen
0.3.4.	C:T ratio	Crossmatch to transfusion ratio
0.3.5.	ERCP	Endoscopic retrograde cholangiopancreatography
0.3.6.	UHL	University Hospital Limerick
0.3.7.	TURBT	Transurethral resection of bladder tumour
0.3.8.	TURP	Transurethral Resection of Prostrate
0.3.9.	EXM	Electronic cross match

#### 0.4. Related documents

HP-BTR-PATINFO	Dissemination of patient information to potential recipients of transfusion
HP-A-BTR-SAMPLEREQ	Procedure for taking and labelling a transfusion sample and completion of the request form
HP-A-BTR-PRESCRIPT	Prescription of blood components and products
HF-A-BTR-ROTS	Record of Transfusion Support
LI-L-BTR-SPECUSERMAN	Blood Transfusion laboratory specimen user manual

#### 0.5. References

1. Handbook of Transfusion Medicine (2007). The Stationery Office, London.
2. Guidelines for the administration of blood and blood components. National Blood Users Group (2004).
3. The administration of blood components, Transfusion Medicine, 2017;28 (1):3-21.
4. Guidelines on transfusion for fetuses, neonates and older children, British journal of haematology 2016;175 (5):784-828.

### 1 BACKGROUND

The aim of these guidelines is to reduce unnecessary crossmatching, increase availability of blood for those who need it and ensure the laboratory has adequate notice of patients with antibodies.

Appropriate use of the guideline facilitates audit of blood usage, a requirement of clinical governance.

Scheduled blood ordering depends on pre-operative grouping and antibody screening. Procedures are classified as:

- Group and antibody screen only (G&S)  
i.e. the patient's blood is grouped and antibody screened and the sample is available for subsequent crossmatch for 72 hours from the time of sample collection.
- Group and crossmatch  
i.e. the patient's blood is grouped and antibody screened and blood is ordered and crossmatched according to the agreed tariff.

This system allows for flexibility, such that if patients in the 'group and screen' category have irregular antibodies, two units of compatible blood will be reserved in advance. Alternatively, if blood is required in excess of the tariff, extra units will be crossmatched, provided the clinical reasons are indicated on the request form.

If irregular antibodies are detected and the laboratory foresees that there may be difficulty in providing blood for an elective procedure, the relevant team will be contacted so that the procedure can be deferred.

Haemovigilance will periodically audit the cross match to transfusion ratio (C:T ratio) for specific surgical procedures. A C: T ratio greater than 2 usually indicates excessive cross match requests.

### **1.1 Electronic issue of red cells (EXM):**

Many patients for elective surgery will be suitable for electronic issue of red cell concentrates. The advantage of electronic issue is that serological cross match is not required and blood can be issued for the patient at the point of need by a telephone request to the transfusion laboratory. This must be followed by a signed request form. Blood will be issued and available within 5 minutes, provided a group and screen has been performed.

### **1.2 Patient requirements for electronic issue (EXM)**

A patient must have both of the following:

- A historical blood group and a negative antibody screen
- A current matching blood group, less than 72 hours old and negative antibody screen.

Patients who have known irregular blood group antibodies or have a positive antibody screen will need a full serological cross match and are NOT suitable for electronic cross match.

## **2 PROCEDURE**

### **2.1. In order for scheduled blood ordering to work efficiently, the following procedure should be carried out:**

- 2.1.1. The type of procedure and any unusual circumstances suggesting that the agreed blood tariff may need to be exceeded should be stated on the request form. Refer to the MSBOS printed on the reverse of the specimen request form for guidance.

- 2.1.2. If there is unexpected blood loss during or after operation in patients in the 'group and screen' (G&S) category, telephone the transfusion laboratory giving
- Name of patient
  - Hospital number
  - Date of birth and
  - Number of units required.
- 2.1.3. A signed request form should also be sent to the blood transfusion laboratory.
- 2.1.4. Group specific uncrossmatched blood can be issued for urgent requests that do not have a previous group (10-15mins).
- 2.1.5. Transport time to other hospitals from UHL should be considered when ordering blood.

### 3 MSBOS

The MSBOS applies to patients in offsite hospitals and patients in UHL who are not suitable for electronic issue

General Surgery	MSBOS
Oesophagogastrectomy	4
Hernia repair	G/S
Gastrectomy (Partial/total)	G/S
Vagotomy +/- drainage	G/S
Cholecystectomy +/- exploration of common duct	G/S
ERCP	G/S
Liver Biopsy	G/S
Large incisional hernia repair	G/S
Laparotomy – planned exploration	G/S
Laparoscopic Nissen's Fundoplication	G/S
Breast reconstruction	G/S
Mastectomy (& axillary clearance)	G/S
Mastectomy (simple)	G/S
Splenectomy	G/S
Splenectomy with thrombocytopenia	2
Resection of soft tissue tumour (limb)	G/S
Resection of soft tissue tumour (intra-abdominal/retroperitoneal)	4

Endocrine Surgery	MSBOS
Adrenalectomy	3

<b>Colorectal Surgery</b>	<b>MSBOS</b>
Intra-abdominal-colectomy/Hemicolectomy (sigmoid/transverse/right/left)	G/S
Anterior resection/Hartman's procedure	G/S
Low anterior resection/abdominoperineal resection	2
Reversal of Hartman's procedure	G/S
Proctectomy and ileal pouch	2
Rectopexy	G/S
Colostomy, gastrostomy, ileostomy	G/S

<b>Vascular Surgery</b>	<b>MSBOS</b>
Endovascular aortic aneurysm repair (EVAR) ( <b>no platelets</b> )	G/S
Conversion of EVAR to open aneurysm repair ( <b>major haemorrhage guideline enacted</b> )	10
Open aneurysm repair ( <b>2 units platelets</b> )	6
Ruptured aneurysm repair ( <b>major haemorrhage guideline enacted</b> )	10
Aorta-femoral, aorto-bifemoral or aorto-iliac bypass	4
Axillo-femoral bypass	2
Femoral-femoral crossover	G/S
Femoral-popliteal bypass	2
Femoral-distal bypass	2
Carotid endarterectomy	G/S
Femoral endarterectomy	G/S
Sympathectomy	G/S
Amputation of leg	G/S
Angioplasty	G/S

<b>Orthopaedic Surgery</b>	<b>MSBOS</b>
Total knee/shoulder/elbow/hip replacement (including bilateral hip or knee replacement) or revision of knee ( <i>in hospitals where emergency O negative blood is available on site</i> )	
• If Hb > 12g/dl	G/S
• If Hb < 12g/dl	1
Bone graft from iliac crest	G/S
Hemiarthroplasty	G/S
Internal fixation of tibia or ankle	G/S
Internal fixation of femur	1
Laminectomy	G/S
Nailing fractured neck of femur (displaced)	G/S
Open reduction and internal fixation	G/S
Osteotomy/bone biopsy	G/S
Revision (including re-revision) of hip prosthesis ( <i>in hospitals where emergency O negative blood is available on site</i> )	

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<b>Orthopaedic Surgery</b>	<b>MSBOS</b>
• If Hb > 12g/dl	2
• If Hb < 12g/dl	4
Salter's osteotomy	G/S
Spinal fusion	2

<b>Urology</b>	<b>MSBOS</b>
Renal biopsy	G/S
Nephrectomy	2
Nephrectomy and exploration of vena cava	4
Open or percutaneous nephrolithotomy	2
Pyeloplasty	G/S
Ureterolithotomy (+/- cystotomy)	G/S
Reimplantation of ureter	G/S
Cystotomy	G/S
Cystectomy (+/- urethrectomy)	4
TURBT	G/S
TURP	G/S

<b>Paediatric Urology</b>	<b>MSBOS</b>
Nephrectomy	1
Open nephrolithotomy	1

<b>Head and Neck, including ENT and Maxillofacial Surgery</b>	<b>MSBOS</b>
Parathyroidectomy	G/S
Thyroidectomy-partial/total	G/S
Neck dissection	2
Neck dissection and composite reconstruction	4
Parotid resection	G/S
Bimaxillary surgery	1
Sagittal split osteotomy	G/S
Le Fort 1 osteotomy	G/S

<b>Obstetrics and Gynaecology</b>	<b>MSBOS</b>
ERPC	G/S
Hydatidiform mole	2
Placenta praevia	2-4
Retained placenta/manual removal of placenta	2
LSCS	G/S
Laparoscopy	G/S
Pelvic floor repair	G/S

**HAEMOVIGILANCE GUIDELINE**

<b>Obstetrics and Gynaecology</b>	<b>MSBOS</b>
Myomectomy	2
Manchester repair	G/S
Total and Sub- total abdominal /laparoscopic or vaginal hysterectomy	G/S
Total and Sub- total abdominal /laparoscopic hysterectomy plus bilateral oophorectomy and omentectomy (BSO).	2
Morcellation of fibroid	G/S
Wertheim's operation	2
Pelvic exenteration	6
Vulvectomy (radical)	2

<b>Plastics</b>	<b>MSBOS</b>
Abdominoplasty	G/S
Breast reduction	G/S
Breast	G/S
Face Lift	G/S

## DOCUMENT REVISION HISTORY

<b>Document Revision History</b>		
Edition.	Description Of Change	Date Of Issue
Edition 01	Initial release	11 <sup>th</sup> June 2009
03	<ol style="list-style-type: none"> <li><b>Section 1.1:</b> Insert "This must be followed by a signed request form"</li> <li><b>Section 3.9:</b> deleted APH/PPH as they are not surgical procedures.</li> <li><b>Section 3.1:</b> Change hiatus hernia to hernia repair</li> <li><b>Section 3.1:</b> Change large incisional hernia to large incisional hernia repair</li> <li><b>Section 3.1:</b> Add in two new surgeries: resection of soft tissue tumour (limb) and resection of soft tissue tumour (intra-abdominal/retroperitoneal)</li> <li><b>Section 3.9:</b> delete APH/PPH as these are not surgical procedures.</li> <li><b>Section 3.9:</b> add in Manchester repair as a surgical procedure</li> <li><b>Section 3.10:</b> new section on plastics</li> <li>New section added at the end of the document referring to patients who are eligible for EXM. In these cases, the blood transfusion medical scientist issues half of the agreed tariff. This applies to patients at UHL only.</li> </ol>	04 <sup>th</sup> October 2016
04	<p>0.5 Updated references Insert: The MSBOS applies to patients in offsite hospitals and patients in UHL who are not suitable for electronic issue</p> <p>3.0 MSBOS table changes: Endovascular aortic aneurysm repair (EVAR) – changed from 2 RCC to G/S Total knee/shoulder/elbow/hip replacement (<i>including bilateral hip or knee replacement</i>) or revision of knee Revision (<i>including re-revision</i>) of hip prosthesis (in hospitals where emergency O negative blood is available on site) Deleted: Hysterectomy – simple G/S and Total abdominal hysterectomy, bilateral oophorectomy and omentectomy 2 RCC Inserted: Total and Sub- total abdominal /laparoscopic or vaginal hysterectomy G/S Total and Sub- total abdominal /laparoscopic hysterectomy plus bilateral oophorectomy and omentectomy (BSO).2 units Inserted: Morcellation of fibroid G/S</p> <p><b>Delete:</b> Where a UHL patient is suitable for electronic issue of red cells, blood can be made available in 5 minutes. In these cases, the blood transfusion laboratory will crossmatch half of the MSBOS specification. This applies to patients in UHL hospital only.</p>	21 <sup>st</sup> Sept 2023

## HAEMOVIGILANCE GUIDELINE

