

## 1 Introduction

1.1 The Optimal Surgical Blood Order Schedule (OSBOS) is fundamentally a table which lists the number of units of blood routinely requested and crossmatched for elective surgical operations and medical procedures. The guideline has been based on a retrospective analysis of actual blood usage in these situations and consultation with the clinical teams for each specialty via the UHL Blood Transfusion Committee.

1.2 The guideline is flexible in that if a patient has known antibodies, is anemic, or complications are envisaged, extra units of blood may need to be provided. This should be discussed with Blood Transfusion staff at the time of requesting the blood, as Blood Transfusion staff are trained to question any requests they feel are inappropriate.

## 2 Scope

2.1 This guideline provides all UHL staff requesting red cells the standard amount of blood cover a procedure usually needs in order to reduce the amount of unnecessary crossmatching. It also suggests when cell salvage may be a viable option.

**N.B. Clinical decisions in individual cases may override this schedule These must be discussed with the Blood Bank.**

## 3 Definitions

3.1 In this policy the term **Tariff** is used to indicate the usual number of red blood cells that are to be requested and issued to the patient to cover their procedure.

3.2 In many cases where blood is seldom transfused peri-operatively, no red cell issue is required, but a valid **Group and Save (G&S)** serum request must have been processed in the laboratory in case of unforeseen bleeding.

3.3 **Cell salvage** is a process where red cells are suctioned from the bleeding area, washed and then made available for reinfusion. This is a safer option and more cost effective than allo red cell transfusion for patients who have larger bleed.

3.4 As red cell issue is a slower process in those patients with known red cell alloantibodies, this policy errs on the side of caution and makes more red cells available up front to cover the operation up for patients with antibodies.

## 4 List of Tariffs

The standard tariff assumes that the patient has no clinically significant blood group antibodies.

“G&S” signifies that the patient must have a valid Group and Save serum sample in the Blood Bank. Sample validity times can be found in the UHL Blood Transfusion Policy

If a patient has blood group antibodies that would prevent rapid issue of red cells then they may crossmatch suitable blood to be waiting in a blood fridge for the patient. Alternately If the bleeding risk is smaller the Blood Bank will ensure that they have enough antigen negative blood “on standby” on site to provide blood within 45 minutes.

### Changes from Last version

- Revision THR and TKRs now only need a Group and Save unless they have antibodies or are anaemic when they should have 2 units
- Hernia repairs no longer need a Group and Save.
- Mastectomies do not need a group and save unless have additional risk factors

**N.B. Clinical decisions in individual cases may override this schedule These must be discussed with the Blood Bank.**

PROCEDURE	Standard Tariff	Alternative tariff when patient has blood group antibodies	Consider For Cell Salvage
<b>GASTROINTESTINAL SURGERY</b>			
Abdominal-perineal resection	2		No
Anterior resection Left/Sigmoid colectomy Panproctocolectomy	2		No
Right hemicolectomy Small bowel resection	G&S	2	No
Pouch surgery	2		No
Reversal of loop ileostomy	Nil		No
Reversal of Hartmann's Reconstitution of bowel continuity	2		No
Enterocutaneous fistula repair	2		No
Rectopexy	G&S	2	No
Oesophagogastrectomy	2	6	No
Total gastrectomy Subtotal gastrectomy	2	4	No
Nissen fundoplication	G&S	2	No
Lab Gastric bypass	G&S	2	No
Lap Sleeve Gastrectomy	G&S	2	No
Lap/open cholecystectomy	Nil		No
ERCP	Nil		No
Liver biopsy	G&S	2	No
Exploration of common bile duct	G&S		No
Liver resection <3 segments	2	6	Yes
Liver resection >=3 segments	4	6	Yes
Whipples	2		Yes
Subtotal/Total pancreatectomy	4		Yes
Splenectomy	2	4	Yes

<b>PROCEDURE</b>	<b>Standard Tariff</b>	<b>Alternative tariff when patient has blood group antibodies</b>	<b>Consider For Cell Salvage</b>
Groin hernia (lap or open)	Nil		No
Incisional hernia	G&S	2	No
<b>VASCULAR SURGERY</b>			
Elective aortic aneurysm repair	2		Yes
Emergency open or endovascular aortic aneurysm repair	6		Yes
Elective endovascular aneurysm repair (EVAR)	G&S		No
Femoro-popliteal by-pass	G&S		Yes
Lower limb grafts	G&S		no
Carotid endarterectomy	NIL		no
Elective endovascular thoracic aneurysm repair	G&S		no
Aorto-bifemoral graft	2		Yes
Embolectomy	G&S		no
Below knee amputation	G&S		
Above knee amputation	G&S		
Crossover graft	G&S		
Cervical sympathectomy	NIL		
Endoscopic cervical sympathectomy	NIL		
Lumbar sympathectomy	G&S		
Arteriography/Angioplasty	NIL		
Axillo-bifemoral graft	G&S		
<b>ENDOCRINE SURGERY</b>			
Removal of thyroid nodules	NIL		
Thyroidectomy	G&S		
Parathyroidectomy	NIL		
Adrenalectomy	2		no
<b>PLASTIC SURGERY</b>			
Abdominoplasty	NIL		
Skin-grafting	NIL		
Mammoplasty	NIL		no
Breast reduction	NIL		no
Simple single mastectomy	NIL		no
Mastectomy <ul style="list-style-type: none"> <li>• Bilateral</li> <li>• Hb &lt; 10, BMI&lt;18 or &gt;35</li> <li>• On warfarin or known bleeding disorder</li> <li>• Post neoadjuvent chemotherapy</li> <li>• Latissimus dorsal flaps or bilateral implants.</li> </ul>	G&S		No
Otherwise	NIL		no
Mycutaneous flap reconstruction	G&S		no
<b>PAEDIATRIC SURGERY</b>			
Femoral osteotomy (paediatric)	1		no
Thoracotomy	1		Yes
Liver surgery	2		Yes
Laparotomy	1		yes
Bowel resection	1		no
Duodenal stenosis	1		no

<b>PROCEDURE</b>	<b>Standard Tariff</b>	<b>Alternative tariff when patient has blood group antibodies</b>	<b>Consider For Cell Salvage</b>
Nissen fundoplication	G&S	1	no
Nephrectomy	G&S	1	Yes
Partial nephrectomy	G&S	1	Yes
Reimplantation of ureters	G&S		no
Pyloric stenosis	G&S		no
Duhamel pull-through	1		no
Gastric transposition	1		no
Choledochyl cyst	1		no
<b>UROLOGY</b>			
Retropubic prostatectomy	2		yes
Radical prostatectomy	G&S		Yes
Partial cystectomy	2		yes
Total cystectomy	4		YES
Nephrectomy (Laparoscopic)	2	2	no
Nephrectomy (open)	2		YES
Nephrectomy + IVC exploration	4		YES
RPLND	2		YES
TURB/TURBT	G&S	2	no
TURP (prostate < 30g)	G&S	2	no
Laser prostatectomy	G&S	2	no
TURP (prostate > 30g)	G&S		no
Pyeloplasty	G&S		no
PCNL	2		no
<b>RENAL</b>			
Renal transplant (Recipient & Donor)	2		yes
Renal biopsy (Hb > 9g/dl)	G&S		no
Renal biopsy (Hb < 9g/dl)	2		no
<b>ORTHOPAEDICS</b>			
Fracture NOF (Hb > 10g/dl)	G&S	2	yes
Fracture NOF (HB < 10g/dl)	2		yes
IM-nail	G&S		no
DHS	G&S		no
Laminectomy	G&S		yes
Below knee amputation	G&S		yes
Above knee amputation	G&S		yes
Discectomy	G&S		yes
Spinal fusion	2		Yes
Total knee replacement	G&S		no
Total hip replacement	G&S		no
Revision total hip replacement	G&S	2	Yes
If Hb <13 in men and 11.5 in women	2	2	Yes
Shoulder replacement	G&S		no
Pelvic fracture surgery	2		Yes
Bilateral total knee replacement	2		no
Revision total knee replacement	G&S	2	yes
If Hb <13 in men and 11.5 in women	2		
Periprosthetic hip fractures	2		yes

<b>PROCEDURE</b>	<b>Standard Tariff</b>	<b>Alternative tariff when patient has blood group</b>	<b>Consider For Cell Salvage</b>
<b>GYNAECOLOGY</b>			
TAH &/- BSO (Hb > 10g/dl)	G&S		yes
TAH &/- BSO (Hb < 10g/dl)	2		yes
Patients with malignant ascites undergoing Major Gynae surgery	Red cell request for procedure <b>plus</b> 3units FFP		
Radical hysterectomy	2		yes
Robotic hysterectomy			
Radical vulvectomy	2		no
Simple vulvectomy	G&S		no
Anterior /Posterior repair	G&S		no
VH+/-Pelvic floor repair	G&S		yes
Laparotomy e.g. ovarian cystectomy	G&S		no
Laparotomy - complex or for ovarian cancer	2		No
Diagnostic Laparoscopy or Dye /sterilization/cystectomy/	G&S		No
Laparoscopic hysterectomy	G&S		
Operative Laparoscopy with extensive dissection	2		No
Myomectomy (unless very large fibroids)	G&S		Yes
Termination of pregnancy or SMM	G&S		no
Hysteroscopy D+C	NO		no
Cone biopsy or large LLETZ	G&S		no
Oophorectomy	G&S		no
Colposuspension	G&S		no
Stable ectopic pregnancy (lap or open)	G&S		no
Unstable ectopic pregnancy or Hb <80g/l (lap or open)	2-4		
Non-tubal ectopic pregnancy	G&S		Yes if open
<b>OBSTETRICS</b>			
Placenta praevia in-patient, repeat sample every 72 hours	G&S	2	Yes
Placenta praevia, bleeding or for caesarean section	2		Yes
Cesarean section	G&S		yes
Placenta accreta	6	6	Yes
Previous PPH	G&S		
Previous Cesarean section	G&S		Yes
<b>CARDIOTHORACIC</b>			
Cardiac catheter	G&S		no
Insertion of pacemaker	G&S		no
Angioplasty	G&S		no
Paediatric angioplasty	1		no
Bronchoscopy	G&S		no
CABG (inc. Redo)	4		Yes

MVR (inc. Redo)	4		Yes
AVR (inc. Redo)	4		Yes
Aortic root replacement	4		Yes
Coarctation (adult)	4		yes
Coarctation (paediatric)	2		yes
Arterial switch	4		yes
BT shunt	4		
Nissen's fundoplasty	4		
Fallots (paediatric)	4		yes
Closure of the chest	2		yes
Dissecting Aneurysm	6		Yes

<b>PROCEDURE</b>	<b>Standard Tariff</b>	<b>Alternative tariff when patient has blood group antibodies</b>	<b>Consider For Cell Salvage</b>
Oesophagectomy	4		no
Oesophagogastrectomy	6		Yes
Cervical mediastinoscopy	G&S		no
Anterior mediastinotomy	G&S		no
Paediatric valvoplasty	1		yes
Hiatus hernia repair	2		no
ECMO	Variable		no
Pneumonectomy / EPP	4		Yes
Decortication	4		Yes
Lung resection – VATS or open	2		no
LVRS	G&S	2	
VATS pleurodesis / bullectomy	G&S	2	no
Cosmetic thoracic surgery	G&S		yes
Rigid / laser bronchoscopy	G&S		no
OGD +/- dilatation	G&S		no
Medical thoracoscopy	G&S		no
<b>OTHER PROCEDURES</b>			
Bone marrow harvest	G&S		
Polytrauma	Variable		Yes