

# 13 Maximum surgical blood ordering schedule (MSBOS)

In order to eliminate unnecessary use of a scarce resource, and to minimise costs to the hospital or patient, the Blood Users Committees of the hospitals should rationalise the ordering of blood into operative categories.

Blood should only be ordered if there is a significant likelihood of it being required and only the recommended number of units should be ordered for the specific type of elective surgery. Exceptions may occur, depending on the clinical status of the patient.

If blood is required in less than 30% of cases of a particular operation, then the option of Group and Screen is recommended. In the event that blood is needed, it can be rapidly selected and released.

In either of the above instances, the practice of over ordering is to be discouraged. In the event of a more than anticipated blood loss, extra units can be issued within a few minutes. Please remember that for every unit of blood that is ordered and not used, a crossmatch fee is levied.

The following MSBOS schedule is intended merely as a guideline; individual hospitals need to formulate their own schedules according to local practice.

**Table 23: Blood ordering schedule as devised by Groote Schuur Hospital**

SURGICAL PROCEDURE	BLOOD ORDER
<b>ENT</b>	
Post tonsillectomy haemorrhage	Group and Screen
Major head and neck surgery with skin flaps	Group and Screen
Epistaxis (uncontrolled by packing)	Group and Screen
Juvenile angiofibroma	2 units red cell concentrate
<b>CARDIOTHORACIC</b>	
Broncho pulmonary resection	2 units red cell concentrate
Pleurectomy and decortication	2 units red cell concentrate
Cardiopulmonary bypass	4 units red cell concentrate
Pericardiectomy	2 units red cell concentrate
Oesophagectomy	2 units red cell concentrate

**HEPATO-BILIARY AND UPPER GIT SURGERY**

Bile Duct Repair	Group and Screen
Liver resection (Porto Caval Shunts)	4 units red cell concentrate
Whipples operation-pancreatico duodenectomy	2 units red cell concentrate
Total gastrectomy / Pancreatic resection	2 units red cell concentrate

**VASCULAR SURGERY**

Aortic aneurysm	2 units red cell concentrate
Thoraco-abdominal aneurysm	2 units red cell concentrate

**TRANSPLANT UNIT**

Renal Transplant	Group and Screen
Graft Nephrectomy	Group and Screen
Living related donor nephrectomy	Group and Screen
Liver transplant (straight forward)	5 units red cell concentrate
Liver transplant (complicated)	Consult surgeon

**NEUROSURGERY**

Burrhole drainage of chronic subdural	No blood is required
Burrhole drainage of brain abscess	No blood is required
Burrhole for tumour biopsy	No blood is required
Laminectomy for disc removal	No blood is required
Decompressive laminectomy for spinal stenosis	No blood is required
Exterior cervical discectomy and fusion	No blood is required
Laminectomy for tumour removal	No blood is required
Ventriculo-peritoneal shunts	No blood is required
Drainage of acute subdural haematoma	Group and Screen
Drainage of acute extradural haematoma	Group and Screen
Craniotomy for depressed skull fractures	Group and Screen
Craniotomy for intracranial tumours	Group and Screen
Trans-sphenoidal removal of pituitary tumours	Group and Screen
Craniotomy for antero fossa repair	Group and Screen
Craniotomy for aneurysm	2 units red cell concentrate
Craniotomy for arteriovenous malformations	2 units red cell concentrate
Craniotomy for drainage of an intracerebral haematoma	2 units red cell concentrate
Craniotomy for meningioma removal	2 units red cell concentrate

**OBSTETRICS**

Placenta Praevia	Group and Screen
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**ORTHOPAEDICS**

BKA	Group and Screen
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AKA	Group and Screen
Bone grafting major (Iliac crest)	Group and Screen
Closed prograde intramedullary fixation of fractures	Group and Screen
Moore's hemiarthroplasty	Group and Screen
Cervical fusion (anterior)	Group and Screen
Fracture neck of femur (internal fixation)	Group and Screen
Lumbar spinal fusion	Group and Screen
Forequarter amputation	2 units red cell concentrate
En bloc excision tumour (consult surgeon)	2 units red cell concentrate
Arthrodesis of hips	2 units red cell concentrate
Hip disarticulation	2 units red cell concentrate
Hind quarter amputation	3 units red cell concentrate
Open reduction fractured pelvis	Consult surgeon
Dislocation of hip, central dislocation, open reduction	3 units red cell concentrate
TKR	2 units red cell concentrate
THR	2 units red cell concentrate
<b>PLASTIC SURGERY</b>	
Major de-sloughing procedures	Group and Screen
Breast reconstruction	Group and Screen
Free flap	2 units whole blood
<b>UROLOGY</b>	
Prostatectomy (TUR or open)	Group and Screen
Urinary Diversion	Group and Screen
Augmentation cystoplasty	Group and Screen
Major TUR bladder tumour	Group and Screen
Bladder diverticulectomy	Group and Screen
Transabdominal vesico-vaginal fistula repair	Group and Screen
Total penectomy	Group and Screen
Standard urethroplasty	Group and Screen
Inguinal node dissection	Group and Screen
Open nephrolithotomy for staghorn calculus	Group and Screen
Partial nephrectomy	Group and Screen
Simple nephrectomy	Group and Screen
Radical nephrectomy	2 units red cell concentrate
Nephro-ureterectomy	2 units red cell concentrate
Urinary undiversion	2 units red cell concentrate
Bladder replacement	2 units red cell concentrate

Continent diversion	2 units red cell concentrate
Radical prostatectomy	4 units red cell concentrate
Cystectomy	2 units red cell concentrate
Kidney exploration (post trauma)	2 units red cell concentrate

**Table 24: Definitions of blood products, blood components and plasma derivatives**

<b>Blood Product:</b>	Any product manufactured from human blood. This includes blood components and plasma derivatives.
<b>Blood Component:</b>	This term refers to a product separated from a single unit of whole blood e.g. <ul style="list-style-type: none"> <li>• Red cell concentrate.</li> <li>• Platelet concentrate.</li> <li>• Fresh frozen plasma.</li> <li>• Cryoprecipitate.</li> </ul>
<b>Plasma Derivative:</b>	This term refers to a plasma product separated from a large volume of pooled plasma by a process called fractionation. These derivatives are manufactured from human plasma under pharmaceutical manufacturing conditions e.g. <ul style="list-style-type: none"> <li>• Coagulation factors such as Factor VIII and Factor IX.</li> <li>• Albumin.</li> <li>• Immunoglobulins.</li> </ul>
<b>Whole blood:</b>	All blood cellular and plasma components together as collected from the donor.
<b>Plasma:</b>	This is the non-cellular component of anti-coagulated blood.
<b>Serum:</b>	This is the non-cellular component of coagulated blood without the clotting factors.

**Table 25: Terms associated with ordering blood**

**NOTE: CONTACT YOUR LOCAL BLOOD BANK TO ENQUIRE, WHICH OF THESE SERVICES ARE AVAILABLE TO YOU AND VERIFY THE TIME PERIODS INVOLVED.**

Emergency blood <b>without</b> specimen:	Blood (usually Group O Rh-negative blood) that is kept in the emergency fridge in Casualty, theatre or the blood bank. This blood is <b>not</b> for a <b>specific patient</b> and is used without any crossmatching. <b><i>This blood should only be used in extreme emergencies. This blood is used on the prescriber's own responsibility.</i></b>
Emergency blood <b>with</b> specimen: (Inland region "Red Label")	Blood of the patient's ABO and Rh type is issued but no crossmatch is performed. It takes 10-20 minutes for this blood to be issued.
Group and screen:	When this is requested a specimen from the patient will be grouped and tested to ensure that it does not contain antibodies, which could delay finding compatible blood components. <b>The purpose of this is to identify a rare donation requirement and take timely action.</b> In normal circumstances should blood be requested it will undergo a standard crossmatch.
Blood on standby:	Blood ordered on standby is grouped and tested for antibodies and the initial crossmatching is done. It is kept for 72 hours. When the <b>blood is needed please note</b> that it will still take about 20-40 minutes before it will be issued. The reason for this is that the crossmatching must be completed. It does however <b>save money</b> for the patient in that if the <b>blood is not used the patient only pays for the crossmatching</b> and not the units of blood components ordered.
Routine blood order: (Standard or full crossmatch)	Blood ordered routinely is fully crossmatched before issue. Once issued it is <b>not returnable (unless packed in a special returnable hamper* within a specified time span)</b> and the patient or hospital pays whether the units were used or not. It takes 1-2 hours for blood to be issued on a standard crossmatch.

*\* The East Coast and South Western Regions may provide hampers for blood products. Blood dispatched in these sealed hampers may be returned to stock provided they have not been opened and the time period specified on the label has not been exceeded.*

**Table 26: List of products for which National Bioproducts Institute is the applicant**

<b>PRODUCT NAME</b>	<b>REG. NUMBER</b>	<b>DOSAGE FORM</b>	<b>ACTIVE INGREDIENT</b>
Albusol 20%	T/30.3/739	Solution for IV Infusion	Human Plasma Albumin
Albusol 4%	T/30.3.738	Solution for IV Infusion	Human Plasma Albumin
Bioplasma FDP (50 ml and 200 ml)	28/30.3/405	Lyophilised powder for IV Infusion	Fresh Human Plasma
Haemosolvate Factor VIII 300 IU	31/30.3/392	Powder for Injection	Human Factor VIII concentrate
Haemosolvate Factor VIII 500 IU (1000 IU – 2 x 500 IU)	Y/30.3/292	Powder for Injection	Human Factor VIII concentrate
Haemosolvex Factor IX	W/30.3/191	Powder for Injection	Human Factor IX complex
Hebagam IM	T/30.2/0746	Solution for IM Injection	Human Hepatitis B Immunoglobulin
Intragam 2 ml	T/30.2/740	Solution for IM Injection	Human Normal Immunoglobulin for Intramuscular Injection
Intragam 5 ml	T/30.2/741	Solution for IM Injection	Human Normal Immunoglobulin for Intramuscular Injection
Polygam 1 g	Z/30.2/367	Lyophilised powder for Infusion	Human Normal Immunoglobulin for Intravenous Infusion
Polygam 3 g	Z30.2/368	Lyophilised powder for Infusion	Human Normal Immunoglobulin for Intravenous Infusion
Polygam 6 g	Z30.2/369	Lyophilised powder for Infusion	Human Normal Immunoglobulin for Intravenous Infusion
Polygam 12 g	29/30.2511	Lyophilised powder for Infusion	Human Normal Immunoglobulin for Intravenous Infusion
Rabigam IM	T/30.2/748	Solution for IM Injection	Human Rabies Immunoglobulin
Rhesugam IM	T30.2/750	Solution for IM Injection	Human Anti-D (Rho) Immunoglobulin
Tetagam IM 250 IU	T/30.2/743	Solution for IM Injection	Human Tetanus Immunoglobulin
Tetagam IM 500 IU	T/30.2/744	Solution for IM Injection	Human Tetanus Immunoglobulin
Vazigam IM	T/30.2/749	Solution for IM Injection	Human Varicella zoster Immunoglobulin