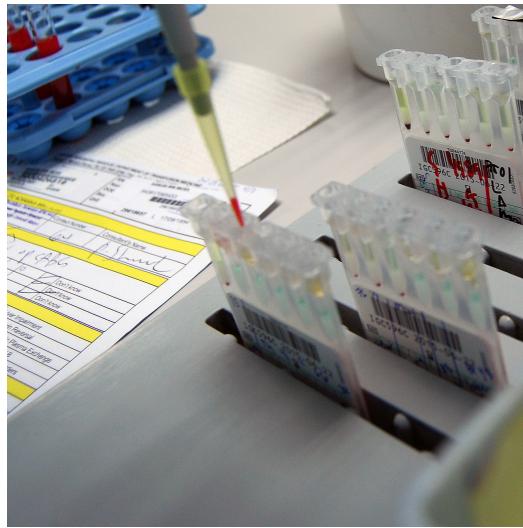




MSBOS and pre-operative blood requests

MSBOS: Maximum surgical blood order schedule



Transfusion of incompatible red cells can lead to haemolytic transfusion reactions that can have serious and sometimes fatal consequences. In order to ensure compatibility, several pre-transfusion tests are performed on the patient samples, which include ABO and RhD typing, antibody screening and cross-matching. Cross-matching of blood that is not transfused however consumes blood bank resources unnecessarily, increases the blood inventory that must be maintained, and increases the number of units that become outdated.

Cross-matching requests therefore should be limited to cases where there is a high likelihood of the patient requiring transfusion during or post-surgery as a result of sudden massive blood loss. A **Group, screen and hold (GSH)** is safe for cases where transfusion of red cells is a remote possibility i.e. less than 10% of patients undergoing the procedure will require red cell transfusion. GSH has been shown to be a clinically safe practice. (Please also refer to information sheet 04.2 – GSH or GXM?)

The **Maximum Surgical Blood Order Schedule (MSBOS)** serves to provide guidance on whether a GSH should suffice for a specified procedure or if red cell units should be cross-matched. This guide is developed based on analysis of usage of blood for the various procedures over a period. It should be emphasized that the MSBOS serves as a guide and patient-specific deviations may sometimes be necessary, taking into account the patient's pre-operative haemoglobin, co-morbid conditions and surgeon-defined anticipated blood loss. Anaesthetists and surgeons would be advised to state clearly in their request if a deviation

from the MSBOS is anticipated, in order to ensure that the transfusion service is prepared for any eventualities.

Timely receipt of the patient sample at the blood bank is crucial in order to ensure that pre-transfusion testing is completed prior to commencement of the procedure. The transfusion service requires that samples arrive at least 12 hours, and preferably 24 hours prior to the scheduled procedure time. This would provide sufficient time for the laboratory to complete its testing and select suitable red cell units, especially if an unusual blood group or antibody had been identified. The transfusion service may also advise postponement of procedures in special circumstances where suitable red cell units cannot be found in time. In order to reduce the occurrence of such unanticipated cases (e.g. rare blood group, high-incidence antibodies), it would be prudent for doctors to request for blood grouping and antibody screening (GSH) when the patient is first booked as well as submit another sample prior to the procedure.

See overleaf for
MSBOS list

UMMC Recommended Maximum Surgical Blood Order Schedule (MSBOS)

General Surgery		Pacemaker insertion	GSH	Elective LSCS with previous scar	GSH*	Dynamic hip screw (DHS)	GSH
Adrenalectomy	GXM 2U	CABG	GXM 6U	LSCS with placenta praevia	GXM 4U	Discectomy	GSH
Appendicectomy	GSH	Congenital heart repair	GXM 4U	Ectopic pregnancy	GXM 2U	Llizarov fixation	GSH
Bowel resection	GXM 3U	Valve Replacement	GXM 6U	Cervical cerclage	GSH	Patellectomy	GSH
CVL insertion	GSH	Neurology		Vaginoplasty	GSH	Resection of bone tumours	GXM 2U
Chemoport insertion	GSH	Craniotomy & excision	GXM 2U	Vulvectomy	GSH	Endoprosthesis	GSH
Cholecystectomy	GSH	Burrhole & drainage	GXM 2U	Laparotomy + cystectomy	GSH	Plating femur	GXM 2U
Colostomy	GSH	Brain tumour excision	GXM 2U	Tubal ligation	GSH	Proximal femoral nailing (PFN)	GXM 2U
Circumcision	GSH	Transphenoidal resection of pituitary tumor	GXM 2U	Hysterectomy + D & C	GSH	Urology	
Excision ± biopsy (cysts, lumps)	GSH	Spinal cord tumour excision	GXM 4U	Laprotomy + tumor debulking	GXM 4U	Renal angiogram	GSH
Fistulectomy	GSH	VP shunt	GSH*	Polypectomy	GSH	Cystectomy, partial	GXM 2U
Gastrectomy, partial	GXM 2U	Laminectomy	GSH	Laparoscopic procedures	GSH	Cystectomy, total	GXM 4U
Gastrectomy, total	GXM 4U	Spinal instrumentation	GXM 2U	Myomectomy (inc. laparoscopic)	GXM 2U	TURBT	GSH
Haemorrhoidectomy	GSH	Cranioplasty	GXM 2U	Total Hysterectomy	GXM 2U	TURP	GSH
Hernia Repair	GSH	Oral and maxillofacial		Vaginal Hysterectomy	GSH	Nephrectomy	GXM 2U
Hepatectomy	GXM 4U	Cleft lip + alveolus	GSH	Wertheim's Hysterectomy	GXM 4U	Percutaneous nephrolithotomy	GXM 1U
Liver/ renal Biopsy	GSH	Bone graft	GXM 2U	TAHBSO	GXM 2U	Renal Transplant - Donor	GXM 2U
Laprotomy ± proceed	GXM 2U	Palatoplasty	GSH	Cone Biopsy	GSH	Renal Transplant - Recipient	GXM 2U
Mastectomy ± axillary clearance	GSH*	Maxillectomy	GXM 2U	Vesico vaginal fistula repair	GSH	Ureterolithotomy	GSH
Pancreatectomy (Whipple's)	GXM 4U	Mandibulectomy	GXM 4U	Orthopedic		Radical Prostatectomy	GXM 4U
Sigmoidoscopy	GSH	Otorhinolaryngology		Amputation above or below knee	GSH	Open Prostatectomy	GXM 2U
Splenectomy	GXM 2U	Excisional biopsy	GSH	Arthroscopic repair	GSH	Ureteroplasty	GSH
Thyroidectomy, partial	GSH	Excision of benign tumours	GSH	Open reduction of fractures	GSH	Vesicolithotomy	GSH
Thyroidectomy, total	GSH	Excision of malignant tumours	GXM 2U	ORIF (Upper Limb)	GSH	Nephroureterectomy	GSH
Tracheostomy	GSH	Laryngectomy	GXM 4U	ORIF (Lower Limb)	GXM 1U	Pyeloplasty	GSH
Vagotomy	GSH	Scope + biopsy	GSH	Osteotomy	GSH	Illeoplasty	GSH
Varicose vein repair	GSH	Laser cordectomy	GSH	Bone grafting	GSH	Bladder augmentation	GSH
Thoracic Surgery		Polypectomy/ FESS	GSH	Wound Debridement	GSH	Partial/ Total Penectomy	GXM 2U
Bronchoscopy	GSH	Parotidectomy	GSH	Revision/ removal of K-wire	GSH	JJ stenting	GSH
Lobectomy	GXM 3U	Myringoplasty	GSH	Removal of nail	GSH	Insertion of Tenckoff catheter	GSH
Mediastinotomy	GSH	Septoplasty	GSH	Removal of plate	GSH	Cystolithopexy	GSH
Pneumonectomy	GXM 3U	Tracheostomy	GSH	Spinal fusion	GXM 2U	TUNA	GSH
Tracheostomy	GSH	Mastoidectomy	GSH	Endoprosthesis	GSH	* GXM may be considered in selected high-risk cases	
Thoracotomy	GXM 3U	Sphenoideectomy	GSH	Vertebraloplasty	GSH	In cases of unexpected bleeding, emergency release, type specific blood is available for ALL cases.	
Oesophagectomy		Radical neck dissection	GXM 4U	Hemiarthroplasty	GXM 2U		
Cardiac and Vascular Surgery		Tonsillectomy	GSH	Total hip replacement (THR)	GXM 3U		
Abdominal aortic aneurysm repair	GXM 6U	Obstetrics & Gynaecology		Total knee replacement (TKR)	GXM 3U		
Arterial by pass and grafting	GXM 4U	LSCS	GSH	Revision of THR/TKR	GXM 3U		
Angiogram KIV PTCA	GSH						

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