

MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE (MSBOS)

GENERAL SURGERY

NO.	SURGERY PROCEDURE	GSH	GXM
1	Abdomino-peritoneal resection		2 units
2	Abdominal perineal resection		
3	Adrenalectomy	/	
4	Appendectomy		
5	Apronectomy/ lipectomy	/	
6	Breast lumpectomy	/	
7	Burn debridement	/	
8	Cholecystectomy (open/ laparotomy)	/	
9	Colectomy		1 unit
10	Colostomy closure		
11	Gastrectomy		2 units
12	Gastric stapling	/	
13	Haemorrhoidectomy		
14	Hepatectomy		1 unit
15	Hiatus hernia repair - thoracic		2 units
16	Hiatus hernia repair - abdominal	/	
17	Inguinal hernia repair		
18	Intraabdominal injury		2 units
19	Laparotomy		1 unit
20	Laparotomy - perforated viscus		2 units
21	Mastectomy		
22	Oesophagectomy		1 unit
23	Pancreatectomy		2 units
24	Parathyroidectomy	/	
25	Portocaval shunt		2 units
26	Saucerization of carbuncles (size > 15cm)		2 units
27	Saucerization of carbuncles (size < 15cm)		1 unit
28	Small bowel resection	/	
29	Splenectomy		2 units
30	Thyroidectomy		
31	Vagotomy	/	
32	Varicose Vein Stripping		
33	Whipple's procedure		1 unit

LEGEND

	4 units	Indicated for GXM 4 units PC
/		Indicated for GSH
		Not indicated for GSH or GXM

MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE (MSBOS)

OBSTETRIC & GYNAECOLOGY

NO.	SURGERY PROCEDURE	GSH	GXM
1	Abortion for D&C		
2	Adherent placenta		4 units
3	Anticoagulant (in labour/ for LSCS)		2 units
4	Bartholin cyst marsupialization		
5	Chorioamnionitis	/	
6	Colpo-suspension	/	
7	Cone biopsy	/	
8	Ectopic pregnancy	/	
9	Ectopic pregnancy (ruptured)		2 units
10	Fetal macrosomia/ polyhydramnios	/	
11	Fetal malpresentation	/	
12	Gravida 5 or more in labour	/	
13	Gravida 2-4 in labour with no history of previous LSCS/ risk factors		
14	History of PPH	/	
15	Hysterectomy		1 unit
16	Hysterectomy (Wetheim)		2 units
17	Induction of labour	/	
18	Inherited or acquired coagulopathy (including HELLP syndrome)	/	2 units
19	In labour with risk of LSCS	/	
20	Laparoscopy	/	
21	LSCS	/	
22	Maternal obesity	/	
23	Molar pregnancy for S&C	/	
24	Multiple pregnancy	/	
25	Myomectomy	/	
26	Not in labour (eg. admit due to reduced FM, IUGR, BP or sugar optimization, fever, etc)		
27	Operative vaginal delivery	/	
28	Ovarian cystectomy	/	
29	Placenta abruption		2 units
30	Placenta praevia bleeding		2 units
31	Post-partum haemorrhage (moderate or severe)		4 units
32	Primigravida in labour	/	
33	Retained placenta		1 unit
34	Severe endometriosis for TAH	/	
35	Termination of pregnancy required surgical intervention	/	
36	Thrombocytopenia (in labour/ for LSCS)		2 units
37	Tubal ligation		
38	Unscreened/ unbooked pregnancy	/	
39	Vaginal birth after Caesar (VBAC)	/	
40	Vaginal repair - EUA/ Extended tear	/	
41	Vulvectomy	/	
42	Vaginal haematoma evacuation	/	
43	Wound breakdown LSCS		

LEGEND

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MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE (MSBOS)

ORTHOPAEDIC

NO.	SURGERY PROCEDURE	GSH	GXM
1	Above knee amputation	/	
2	Arthroscopy		
3	Arthroscopy		
4	Below knee amputation	/	
5	Brachial plexus repair	/	
6	Debridement	/	
7	Femoral nail removal		
8	Femoral osteotomy		2 units
9	Foot/ ankle/ malleolus		
10	Femur fracture	/	
11	Hand/ foot amputation	/	
12	Hip (hemiarthroplasty/ screw/ DHS)	/	
13	Incision and drainage		
14	Interlocking nail	/	
15	Knee replacement	/	
16	Laceration wound		
17	Laminectomy		
18	Meniscectomy		
19	Ray's amputation		
20	Scoliosis surgery		2 units
21	Skin graft		
22	Spinal fusion/ laminectomy	/	
23	Synovectomy	/	
24	Tendon repair	/	
25	Total hip/ knee/ shoulder replacement		2 units

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MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE (MSBOS)

NEUROSURGERY

NO.	SURGERY PROCEDURE	GSH	GXM
Trauma			
1	Craniotomy + clot evacuation (EDH/ SDH)		2 units
2	Decompressive craniectomy + clot evacuation + fasciduroplasty + ICP		2 units
3	Frontal sinus cranialization	/	
4	ICP monitoring		
5	Wound debridement +/- elevation of fracture	/	
Neuro-Oncology			
1	Cerebellopontine angle tumour		2 units
2	Convexity and falx meningioma		1 unit
3	High grade glioma		2 units
4	Inter-ventricular tumour		1 unit
5	Low grade glioma		1 unit
6	Meningioma in pregnancy		4 units
7	Parasagittal meningioma		2 units
8	Pineal region tumour		2 units
9	Pituitary Meningioma - Transphenoidal	/	
10	Pituitary Meningioma - Transcranial		2 units
11	Skull base meningioma (olfactory/tuberculum sella/sphenoid wing)		2 units
12	Sphenoid wing meningioma		2 units
13	Tumour Biopsy		
Neuro-vascular			
1	AVM Excision		2 units
2	Clipping of aneurysm		2 units
3	Craniotomy for hypertensive bleeding(supratentorial and infratentorial)		1 unit
4	Coiling		
5	Decompressive craniectomy for malignant MCA infarct		1 unit
6	Embolization		
Spine			
1	ACDF/ACCF	/	
2	Posterior instrumentation	/	
3	Tumour excision/debulking (extradural/intradural extramedullary/Intramedullary)		1 unit
Pediatrics Case			
1	Craniosynostosis		2 x (20cc/kg)
2	EVD/VPS shunt/ommayya shunt		
3	Repair of Myelomeningocele		20cc/kg
4	Trauma		2 x (20cc/kg)
5	Tumour		2 x (20cc/kg)
General			
1	Burr hole and drainage	/	
2	Carpal tunnel release		
3	Cerebral abscess (Burr hole and aspiration)		
4	Cerebral abscess (Craniotomy + excision)	/	
5	Cranioplasty	/	
6	Endoscopic third ventriculostomy +/- septum pellucidostomy		
7	EVD		
8	Excision of subdural empyema	/	
9	Tracheostomy		
10	Wound debridement for infected craniotomy		1 unit

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CARDIOTHORACIC

NO.	SURGERY PROCEDURE	GSH	GXM
1	Aortic Trauma		4 units
2	BENTALL surgery		4 units
3	CABG		4 units
4	Cardiac/ Thoracic trauma		4 units
5	Cardiac catheterization	/	
6	Coronary angiogram	/	
7	Double valve replacement		4 units
8	Emergency chest re-open		4 units
9	Excision of atrial myxoma		3 units
10	Excision of mediastinal mass		2 units
11	ASD closure		3 units
12	VSD closure		3 units
13	Valve replacement		3 units
14	Lobectomy		2 units
15	PDA ligation		2 units
16	Pneumonectomy		3 units
17	Thoracotomy		2 units
18	Pericardial drainage		2 units
19	Sternal wiring		2 units
20	Sternal wound debridement		2 units
21	Pleurectomy	/	
22	Tymectomy	/	
23	Open lung biopsy	/	
24	Tracheostomy	/	
25	Removal of sternal wire	/	
26	Pacemaker insertion	/	

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UROLOGY

NO.	SURGERY PROCEDURE	GSH	GXM
1	Cystoscopy		
2	Cystectomy		4 units
3	Nephrectomy		2 units
4	Percutaneous Nephrolithotomy (PCNL)	/	
5	PCN insertion		1 unit
6	Prostatectomy		4 units
7	Pyelolithotomy	/	
8	Renal injury		2 units
9	Renal transplant	/	
10	RPG stenting		
11	Suprapubic catheterization		
12	TURP/ TURBT		1 unit
13	Ureterolithotomy	/	
14	Urethroplasty		2 units
15	Wound debridement for Fournier's gangrene		1 unit

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EAR, NOSE & THROAT

NO.	SURGERY PROCEDURE	GSH	GXM
1	Adenoidectomy	/	
2	Adenotonsilectomy	/	
3	Ethmoidectomy	/	
4	Mastoidectomy	/	
5	Modified radical neck dissections	/	
6	Parotidectomy	/	
7	Para/ retropharyngeal abscess drainage		
8	Tonsilectomy	/	
9	Total laryngectomy	/	
10	Tracheostomy	/	
11	Rhinoplasty	/	

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MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE (MSBOS)

MISCELLANEOUS

NO.	SURGERY PROCEDURE	GSH	GXM
1	Liver biopsy	/	
2	Percutaneous drainage		
3	Pigtail insertion		
4	Renal biopsy	/	
5	Scrotal abscess		
6	Wound Debridement (Burn)	/	2 units

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MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE (MSBOS)

PEADS SURGICAL

NO.	SURGERY PROCEDURE	GSH	GXM
1	ADHESIVE OBSTRUCTION		/
2	ANOPLASTY/IMPERFORATED ANUS		
3	ASD		
4	B/L SUBDURAL HEMORRHAGE		
5	BALLON ATRIAL SEPTOSTOMY/TGA,PDA,VSD		
6	BILATERAL HYDRONEPHROSIS		
7	BROCHOSCOPY		
8	BURN		/
9	BURRHOLE		
10	CARDIAC TAMPONADE		/
11	CLEAR CELL RENAL CARCINOMA		/
12	CLEFT LIP AND PALATE		
13	CLOSURE JEJUNOSTOMY	/	
14	COLOSTOMY		
15	COLOVESICLE FISTULA		
16	CRANIOTOMY FOR SUBDURAL COLLECTION		/
17	CRANIOTOMY FOR TRAUMA CASE		/
18	DUODENAL ATRESIA		/
19	ENTEROCOLITIS FOR DIVERTING STOMA		
20	FRONTAL EVD		
21	INFECTED VP SHUNT		
22	KASAI PROCEDURE/ BILIARY ATRESIA/ CHOLEDOCHAL CYST		/
23	LAPARATOMY/ DIAPHRAGMATIC HERNIA		/
24	LAPAROTOMY		/
25	LAPAROTOMY FOR PERORATED NEC		/
26	LAPAROTOMY KIV STOMA/ BLADDER INJURY/ EXPLORATORY LAPAROTOMY TRAUMA		/

27	LAPAROTOMY/ HIRSCHSPRUNG DISEASE/ DUHAMELL OR OTHER PULLTHROU	/	/
28	LAPAROTOMY/INTESTINAL OBSTRUCTION		/
29	LAPATOROTOMY/DUODENAL STRICTURE		/
30	MALROTATION		/
31	MYELOMENINGOCELE REPAIR/RUPTURED MYELOMENINGOCELE		
32	NEPHRECTOMY		
33	OGDS FOR BLEEDING OESOPHAGEAL VARICES		/
34	PDA LIGATION		/
35	PERFORATED APPENDICITIS/APPENDICECTOMY		
36	PYELOPLASTY FOR PUJ OBSTRUCTION & HYDRONEPHROSIS		/
37	RECTOVAGINAL FISTULA		
38	SMALL BOWEL ATRESIA		/
39	SOL		/
40	SPLENECTOMY		/
41	STOMA CLOSURE		/
42	TETHERED CORD		
43	THORACOTOMY + RESECTION/ CONGENITAL AIRWAY MALFORMATION		/
44	TRACHEOESOPHAGEAL FISTULA REPAIR		/
45	TRANSPOSITION OF GREAT ARTERIES		/
46	TUMOUR SURGERY - NEPHRECTOMY FOR WILLMS, TERATOMA, NEUROBLASTOMA, LIVER RESECTIONS		/
47	VP SHUNT/ HYDROCEPHALUS		/
48	WOUND DEBRIDEMENT (BURNS OR MAJOR WOUND DEBRIDEMENT)		/

*** GSH is only for patients more than 4 months.

LEGEND

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