Pre-operative Surgery Blood Ordering Schedule

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Key Documents Owner:	Dr Harsha Mistry	Clinical Lead for Pre-Op Assessment
Approved by:	Pre-op Directorate Governance Meeting	
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Key Amendment

Date	Amendment	Approved by
21st January 2019	Inclusion of advice for edoxaban. Additional information for the management of medicines for diabetes	Medicines Safety Committee
25th June 2020	Document extended for 6 months during COVID-19 period.	QGC
4th January 2021	Pre-operative assessment Key Documents approved for 3 years	Pre-op Directorate Governance Meeting
21st June 2021	Document updated to reflect a change of G-S validity from 3 days to 7 days.	Dr Hutchinson
4th January 2022	Maxillofacial surgery section added	Dr Hutchinson
27th December 2023	Extended document for 6 months whilst under review. Updated owner details.	Dr Harsha Mistry
26.9.2024	Updated details regarding G+S for Laparoscopic appendicectomy	Theatre / anaesthetic governance meeting

Introduction

This guideline aims to ensure appropriate blood support is available for surgery undertaken in Worcestershire.

This guidance is not absolute. Factors other than surgery should be considered when deciding on availability of blood for surgery. This includes:

- Use of antiplatelet drugs
- Bleeding disorders
- Anaemia
- Other co-morbidities

Timing of Group and Save

To issue blood components the blood bank requires 2 samples. One of these is a historic sample and the 2nd sample should be within 7 days of the anticipated operation (unless patient has atypical antibodies or has been transfused or pregnant within last 3 months when they require second sample within 72 hours of surgery).

Ideally the second sample should be within 3-6 days of the surgery date to ensure there is also availability of blood post-operatively.

Please state planned date and type of surgery on the request form.

For full details of how to make a request for blood please refer to the 'Sample Collection and Blood Transfusion Requests' Policy (WAHT - KD001).

Electronic Issue

Electronic issue is the supply of blood on the basis of an automated confirmed blood group and a negative antibody screen.

Patients are suitable for electronic issue if they have:

1. A historical blood group and negative antibody screen
2. A current matching blood group and negative antibody screen

The advantage of electronic issue is that blood can be issued within 5 minutes of telephone request

Patients who have a positive antibody screen will require a full cross match (see below)

Atypical Antibodies

A positive antibody screen means that patients cannot have blood components issued rapidly. Instead blood components may have to be ordered in from the central blood service in Birmingham.

Emergency Rh D negative blood may not be suitable for patients with clinically significant antibodies. Therefore, if there is risk of significant haemorrhage, these patients are operated on at a site with a blood bank (i.e. Worcester Royal Hospital (WRH) or the Alexandra Hospital, Redditch (AH)). The blood bank will usually be able to provide tailored blood products to minimise any reaction and will also arrange for fully cross matched blood to be transported in from a regional BTS centre.

When a patient is identified as having a positive antibody screen:

- Please discuss with the haematology service (i.e. the lab or consultant if there are uncertainties) to ascertain if blood from a regional centre will be needed.
- If specific cross matched blood is needed from outside the Trust please liaise with blood bank to ensure it is available (amount to request is indicated in policy below).
- Please forewarn the peri-operative team about the antibodies present (ideally email to anaesthetist and surgeon designated to do list)
- Often blood will be transported in from the central blood service in Birmingham meaning several hours notice is needed before blood can be issued. This is the rationale for requesting cross matched blood prior to surgery.

If there is a historic record of atypical antibodies and the patient is presenting for surgery with a risk of significant haemorrhage please request blood from blood bank as detailed below. An example is a patient (with antibodies) for a simple knee replacement with no other risk factors – as the patient has a history of antibodies they will require blood to be ordered from blood bank in advance of surgery.

In some situations an anti-D antibody may be identified after prophylactic anti-D is given during pregnancy. The patient will not be eligible for Electronic issue. In these situations the case must be discussed with blood bank. The decision about whether to proceed will be on a case by case basis and may require advice from the on-call haematologist.

Emergency Surgery

For emergency or urgent cases where there is a risk of significant haemorrhage the transfusion lab will require 2 valid group and save samples to issue group specific blood in case of intra/post-operative bleeding.

The timing of the samples should be an individualised decision which weighs up the risks and benefits of timely surgery with the necessity of having a preoperative group and save sample received in the lab. For example in some cases it would be justified to send a second sample from the anaesthetic room to facilitate a timely operation and avoid a delay while a ward takes and sends a blood sample.

Emergency Laparoscopic Surgery
Major laparoscopic surgery carries a small risk of major vessel injury and occasional significant perioperative bleeding. For major laparoscopic operations (including gynaecology procedures which often use a Veress needle), it is recommended that there are 2 valid samples, as above, in case of haemorrhage.

Laparoscopic appendicectomy, including in paediatrics, has a very low rate of haemorrhage, due to the open port insertion and minor nature of surgery. For laparoscopic appendicectomy, group and save is not required if the below conditions are met:

- High likelihood of appendicitis
- ASA 1 or 2 patient
- BMI below 40

Surgery at Kidderminster Treatment Centre (KTC)

KTC does not have a designated blood bank. Patients having surgery at KTC can use O negative blood while they are waiting for group specific blood to be delivered from a blood bank (either at WRH or the Alex).

Patients who have atypical antibodies identified in their group and save sample cannot have surgery associated with potential significant haemorrhage at KTC. This is because:

- The O-ve blood may not be suitable for these patients
- There will be significant time delays in arranging for specific blood for them from the main blood banks
- There is no cell-saver at KTC
- It is impossible to quantify how serious an antibody reaction will be and so surgery needs to be on a site which can provide specific blood to minimise the risks of transfusion reaction.

If a patient is having an operation associated with potential risk for significant haemorrhage and they are identified as having atypical antibodies they should be moved to surgery at a centre with a blood bank. Such operations include:

- Laparoscopic cholecystectomy / fundoplication / hernia repair
- Gynaecologic laparoscopy
- Bilateral mastectomy
- Vaginal hysterectomy
- Total hip / knee or shoulder replacement

Elective Surgery Reference Table

Operation	**1st G + S**	**2nd G + S within 7 days** of surgery (WRH / Alexandra Hospital)**	**2nd G + S within 7 days** (Kidderminster Treatment Centre)**	**Action if atypical Antibodies present** *Please note patients with antibodies are **not** suitable for KTC if there is risk of significant haemorrhage*
ENT				
Laryngectomy	YES	YES	Not routinely done at KTC	2 units X-match
Neck dissection	YES	YES	Not routinely done at KTC	2 units X-match
Parathyroidectomy	YES	Not needed	Not routinely done at KTC	Not X-matched if no risk factors*
Thyroidectomy	YES	YES	Not routinely done at KTC	2 units X-match
General				
Laparoscopic / Open • **Anterior Resection** • **AP Resection** • **Cholecystectomy** • **Colectomy** • **Hemi-colectomy** • **ELAP** • **Gastrectomy** • **Fundoplication**	YES	YES	YES	2 units X-match
Laparoscopic femoral/ inguinal hernia repair	YES	YES	YES	2 units X-match
Rectopexy (open or laparoscopic)	YES	YES	Not routinely done at KTC	2 units X-match
Splenectomy	YES	YES	Not routinely done at KTC	4 units X-match
Stoma reversal - open	YES	Not needed	Not routinely done at KTC	Not X-matched if no risk factors*
Stoma reversal - laparoscopic	YES	YES	Not routinely done at KTC	2 units X-match
TATME	YES	YES	Not routinely done at KTC	2 units X-match
Gynaecology				
Abdominal Hysterectomy	YES	YES	Not routinely done at KTC	2 units X-match
Ectopic pregnancy	YES	YES	Not routinely done at KTC	2 units X-match
Evacuation Retained Products of Conception	YES	YES	YES	2 units X-match
Diagnostic Laparoscopy	YES	Not needed	YES	2 units X-match

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Laparoscopic Hysterectomy	YES	YES	YES	2 units X-match
Laparoscopic Oophrectomy	YES	YES	YES	2 units X-match
Myomectomy	YES	YES	YES	2 units X-match
Open Oophrectomy	YES	YES	Not routinely done at KTC	2 units X-match
Ruptured ectopic	YES	YES	Not routinely done at KTC	4 units X-match
Transvaginal tape (colposuspension)	YES	Not needed	YES	Not X-matched if no risk factors*
Vaginal Hysterectomy	YES	YES	YES	2 units X-match
Vaginal Prolapse repair	YES	Not needed	YES	Not X-matched if no risk factors*
Obstetrics				
When atypical antibodies are identified in an obstetric patient: • These woman require consultant led antenatal care as per local guidelines • There must be a discussion with haematology about what blood components need to be available for the time of delivery. • A maternal group and save sample must be sent immediately on admission for delivery, or potential delivery, to allow blood bank to screen for the presence of further antibody				
Emergency Caesarean Section	YES	YES	Not routinely done at KTC	2 units X-match
Placenta Praevia	YES	Cross match 4 units RBC	Not routinely done at KTC	6 units X-match
Placenta removal	YES	YES	Not routinely done at KTC	2 units X-match
Significant Antepartum haemorrhage	YES	Cross match 4 units RBC	Not routinely done at KTC	4 units X-match
Trial of scar	YES	YES	Not routinely done at KTC	2 units X-match

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Trauma/ Orthopaedics				
Dynamic Hip Screw	YES	YES	Not routinely done at KTC	2 units X-match
Neck of femur fracture	YES	YES	Not routinely done at KTC	2 units X-match
Total hip replacement	YES	Not routinely if no risk factors*	YES	2 units X-match
Total hip replacement - revision	YES	YES	Not routinely done at KTC	2 units X-match
Total knee replacement	YES	Not routinely if no risk factors*	YES	2 units X-match
Total knee revision	YES	YES	Not routinely done at KTC	2 units X-match
Total Shoulder replacement	YES	Not routinely if no risk factors*	YES	2 units X-match
Urology				
TURBT	YES	Not routinely if no risk factors*	Not routinely done at KTC	Not X-matched if no risk factors*
TURP	YES	Not routinely if no risk factors*	Not routinely done at KTC	2 units X-match
Laparascopic / open • **Nephrectomy (includes partial)**	YES	YES	Not routinely done at KTC	4 units X-match
Cystectomy	YES	YES	Not routinely done at KTC	4 units X-match
Percutanenous Nephrolithotomy (PCNL)	YES	YES	Not routinely done at KTC	2 units X-match
Prostatectomy	YES	YES	Not routinely done at KTC	2 units X-match
Pyeloplasty	YES	YES	Not routinely done at KTC	2 units X-match
Bariatric				
Laparoscopic sleeve gastrectomy	YES	YES	Not routinely done at KTC	2 units X-match
Laparoscopic Roux en Y Gastric Bypass	YES	YES	Not routinely done at KTC	2 units X-match
Laparoscopic gastric band removal	YES	YES	YES	2 units X-match

Operation	**1st G + S**	**2nd G + S within 7 days** of surgery (WRH / Alexandra Hospital)**	**2nd G + S within 7 days** (Kidderminster Treatment Centre)**	**Action if atypical Antibodies present** *Please note patients with antibodies are **not** suitable for KTC if there is risk of significant haemorrhage*
Vascular				
Abdominal aneurysm repair	YES	YES	Not routinely done at KTC	6 units X-match
Aorto-femoral graft	YES	YES	Not routinely done at KTC	4 units X-match
Carotid endarterectomy	YES	YES	Not routinely done at KTC	2 units X-match
Endovascular Aneurysm Repair (EVAR)	YES	YES	Not routinely done at KTC	4 units X-match
Femoral-distal graft	YES	YES	Not routinely done at KTC	2 units X-match
Femoral endarterectomy	YES	YES	Not routinely done at KTC	2 units X-match
Profundoplasty	YES	YES	Not routinely done at KTC	2 units X-match
Ruptured abdominal aneurysm repair	YES	Cross match 6 units RBC. Consider major haemorrhage protocol.	Not routinely done at KTC	Discuss with blood bank X-match 6 units RBC Consider Major Haemorrhage protocol
Maxillo-facial				
Osteotomy (maxillary or mandibular)	YES	Not needed	Not routinely done at KTC	2 units X match prior to surgery
Major maxillofacial cancer surgery (i.e. neck dissection and/or jaw resection)	YES	YES	Not routinely done at KTC	2 units X match prior to surgery

* Presence of risk factors indicates:
- Anaemia, i.e. Haemoglobin below reference range
- Coagulopathy i.e. Von Willebrands Disease, Haemophillia
- Thrombocytopaenia i.e. Platelet count below 80
- Presence of antibodies in previous Group and Save sample

** 2nd sample required within 7 days of surgery. If patient has been transfused, pregnant of has history of antibodies the 2nd sample should be within 72 hours of surgery.

References

Opitz et al. Bleeding remains a major complication during laparoscopic surgery: analysis of the SALTS data base. Langenbecks Archives of Surgery 2005 Vol 390 Issue 2 p128-133

Maximum Surgical Blood Ordering Schedule. North Bristol NHS Trust. Last updated: 26/04/2018 For Review: 01/05/2020. PDF accessed on internet.

Contribution List

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This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
Trust Transfusion Committee July 2019
Anaesthetic directorate governance meeting 22/10/19