Worcestershire Acute Hospitals NHS Trust

Pre-operative Surgery Blood Ordering Schedule

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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

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 other should be within 72 hours of the anticipated operation.

Ideally the second sample should be within 24-48 hours 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. This includes laparoscopic surgery, where the published incidence of major vessel injury is 0.09% and there is significant perioperative bleeding in 1.5 to 1.7% of cases.

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.

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

Operation	**1st G + S**	**2nd G + S within 72 hrs of surgery (WRH / Alexandra Hospital)**	**2nd G + S within 72 hrs (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**	**4 units X-match**

Operation	**1st G + S**	**2nd G + S within 72 hrs of surgery (WRH / Alexandra Hospital)**	**2nd G + S within 72 hrs (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*
			done at KTC	
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**
Surgery	**1st G + S**	**2nd G + S within 72 hrs (WRH/Alex)**	**2nd G + S within 72 hrs (KTC)**	**Cross match needed if Antibodies present** *Please note patients with antibodies are **not** suitable for KTC if there is risk of significant haemorrhage*
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**
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				

Operation	**1st G + S**	**2nd G + S within 72 hrs of surgery (WRH / Alexandra Hospital)**	**2nd G + S within 72 hrs (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*
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**
Surgery	**1st G + S**	**2nd G + S within 72 hrs (WRH/Alex)**	**2nd G + S within 72 hrs (KTC)**	**Cross match needed if Antibodies present** *Please note patients with antibodies are **not** suitable for KTC if there is risk of significant haemorrhage*
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**	**Not routinely**	**Not X-matched if**

Operation	**1st G + S**	**2nd G + S within 72 hrs of surgery (WRH / Alexandra Hospital)**	**2nd G + S within 72 hrs (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*
		no risk factors*	**done at KTC**	**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**
Surgery	**1st G + S**	**2nd G + S within 72 hrs (WRH/Alex)**	**2nd G + S within 72 hrs (KTC)**	**Cross match needed if 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**

Operation	**1st G + S**	**2nd G + S within 72 hrs of surgery (WRH / Alexandra Hospital)**	**2nd G + S within 72 hrs (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*
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**

* 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

References

All references should be 'Harvard' referenced, eg,

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.

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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