

DOCUMENT CONTROL PAGE	
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1. Introduction

- 1.1 Adult major haemorrhage is generally regarded as the loss of blood of 150 millilitres per minute or more
- 1.2 Alternative definitions are: Loss of 50% blood volume within 3 hours or replacement of a person's total blood volume in less than 24 hours, which for an adult is 8 – 10 units.

2. Purpose

- 2.1 The purpose of this guideline is to assist staff in the management of major haemorrhage in the adult patient group.
- 2.2 This guideline has been produced in order to manage the risk and improve the quality of care to patients.

3. Roles and Responsibilities

Each individual Hospital/Managed Clinical Service is responsible for coordinating the response within their own service.

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- 3.1 The Executive Hospital Transfusion Committee is responsible for:**
 Ratification of the guidelines and monitoring the effectiveness of the guidelines.

- 3.2 Group Chief Executive Officer and Hospital CEOs are responsible for:**
 Ensuring the operational implementation of this guideline in their areas of responsibility.

- 3.3 Medical Directors are responsible for:**
 Ensuring the operational implementation of this guideline in their own Hospital / Managed Clinical Service area of responsibility.

- 3.4 The Directors of Nursing are responsible for:**
 Ensuring dissemination to all staff involved in the care of patients that maybe at risk of major haemorrhage is fully aware of this guideline and how to access and activate the major haemorrhage pathway.

- 3.5** Duty Managers must familiarise themselves with this pathway.

- 3.6** Lead nurses/ Matrons /senior bleep holders must familiarise themselves with this guideline and how to access and activate the major haemorrhage pathway.

Staff should contact their Hospital Transfusion Laboratory or Transfusion Practitioners should they have any concerns about this guideline.

4 Detail of Procedural Document.

The relevant flowcharts are available in the clinical areas as hard copies on the resuscitation trollies and can be found on the intranet. (See section 11)

Principles of Management

4.1 Assess & Initiate Resuscitation

- 4.1.1 When a patient is identified with suspected major haemorrhage, the patient should be assessed and managed according to ABCDE principles.

- 4.1.2 Help should be called urgently by dialing 2222 and fast bleeping the relevant personnel and asking them to attend the clinical area.

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4.1.3 The personnel required will depend on the clinical scenario and who is already present.

4.1.4 Insert large bore IV cannulae x 2 and take blood samples for FBC, U&E, PT, APTT, fibrinogen and a group and save(G&S).

(see section 4.4 for further details on specimen requirements and order of draw).

Note: Two G&S samples taken at different times, ideally by different people is required were the patient has no transfusion history.

4.1.5 The following near patient tests should be undertaken: V/ABG (venous/arterial blood gas), including lactate and Ca^{2+} , TEG (thromboelastography)/ ROTEM (rotational thromboelastometry) if available.

4.1.6 Keep the patient warm. Dry the patient and keep them covered as much as possible. Use warmed fluids (where possible) and a warm air blanket (if available). All intravenous fluids should only be warmed using equipment designed for that purpose. Consider the use of a blood warmer.

4.1.7 Normocalcaemia (ionised calcium > 1 mmol/l), and a pH > 7.35 should be targeted.

4.1.8 In theatres, the adult emergency department and adult critical care there are usually enough staff present to manage the patient. However, specific personnel may be required and can be summoned via switchboard by fast bleep (2222).

4.1.9 In the ward setting fast bleep the Specialist Registrar and FY2 on call for the relevant specialty (e.g. medicine, surgery, gynaecology). If additional support is required, fast bleep the anaesthetic registrar 2ND on call, the Emergency Anaesthetic Practitioner and the Senior Nurse Bleep Holder for that area. Other staff such as surgeons or gastroenterologists may be required depending on the site of haemorrhage.

4.1.10 In some occasions a patient may refuse blood/blood components. Please refer to guidance and pathways on the intranet. (See Section 11)

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In all cases communication should be escalated to the Consultant in charge of the patient to ensure involvement as soon as possible.

4.2 A Team Approach – Assign roles

- 4.2.1 When major haemorrhage is suspected, support should be escalated and include Consultant input.
- 4.2.2 The Team Leader is assigned by the most senior clinician present. The Team Leader should assign the roles of Communication Lead, Resuscitation Lead, Scribe and a 'Runner' (porter) to transport samples and blood and blood components. The team members and additional support will vary according on the type of haemorrhage and the clinical area.

4.3 Stop the Bleeding

- 4.3.1 This may involve local, surgical and interventional techniques.
- 4.3.2 Management of the cause of bleeding should be undertaken in parallel with resuscitation and transfusion.
- 4.3.3 Early use of intravenous tranexamic acid is recommended in bleeding associated with major trauma (within 3 hours), in bleeding associated with surgery, and in obstetric haemorrhage.
- 4.3.4 Tranexamic acid should be given in haemorrhage associated with trauma at a dose of 1g over 10 minutes followed by 1g over 8 hours as an infusion (this should be commenced within 1 hour of trauma and no longer than 3 hours).
- 4.3.5 An alternative is to give a second bolus of 1 gram of tranexamic acid IV.
- 4.3.6 Tranexamic acid should not be given in the setting of GI haemorrhage.

4.4 Activation of Major Haemorrhage Pathway

- 4.4.1 If immediate red cell transfusion is required, emergency group O red blood cells is available and should be used until the group specific blood can be supplied from the Transfusion Laboratory.

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4.4.2 Group O D Negative can be given to all patients without special requirements or known antibodies. To safeguard stock for those who need it, O D Negative must be reserved for the following patients:

- All patients <18 years old.
- All patients assigned female at birth <50 years old.
- Patients where sex at birth is unknown.

4.4.3 Group O D positive blood can be given to the following patients who do not have special requirements or known antibodies:

- Patients assigned Male at birth over the age of 18
- All patients over the age of 50 years old.

4.2.3 Group and save sample/s must be taken prior to administration of emergency group O red blood cells.

Note: Two G&S samples taken at different times, ideally by different people is required were the patient has no transfusion history.

4.2.4 The emergency group O blood can be collected by any member of the clinical staff.

4.2.5 This can be accessed and administered prior to or simultaneously to activation of the major haemorrhage pathway but the transfusion laboratory must be informed.

4.2.6 The use of emergency group O blood should be limited to no more than 2 units per patient where possible.

4.2.7 If a major or ongoing haemorrhage is identified or suspected, then the Major Haemorrhage Pathway (MHP) must be activated as soon as possible.

4.2.8 Oxford Road Campus, Wythenshawe and North Manchester General Hospital

For blood and blood components call **2222** state 'Adult Major Haemorrhage, <exact location>'. The caller will request the attendance of the emergency response porter to either the clinical area or the transfusion laboratory. This

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will depend on whether samples need to be transported to the laboratory or not. The caller will be asked to stay on the line so that they can be connected to the Transfusion Laboratory Biomedical Scientist (BMS).

4.2.9 **Trafford Campus**

For blood and blood components call 2222 state 'Adult/Paediatric major haemorrhage and location' the emergency response porter will be activated to attend the laboratory.

Between the hours of 21:00 to 07:00 hrs the emergency porter and a member of the hospital out of hour's team will be activated to attend the laboratory to access the emergency Group O blood.

Ward/Unit staff will then be directed to phone the Transfusion laboratory:

During working hours (Monday – Sunday 07:00 – 19:00) the clinical staff should contact the transfusion laboratory on extension 2479 or bleep 060.

Out of hours (Monday – Sunday 19:00 – 07:00) the laboratory service is not available. Contact the transfusion laboratory at ORC on 0161 276 4400 or bleep 2525 via switchboard on 0161 276 1234 to inform them of major haemorrhage activation at Trafford site.

4.2.10 **All Sites**

The Transfusion Laboratory BMS will check the following:

- Confirm that this 'Major Haemorrhage Pathway' is activated.
- Establish the patient's full identity.
- If there is a valid sample available in the laboratory or in transit and if a second sample is required.
- If emergency group O blood is being used, how much and where from.
- Does the caller know where their nearest emergency group O blood is located
- Establish contact numbers to be used during the episode and explain how the Communication Lead contacts the laboratory and vice versa.

4.2.11 The caller should have patient details available when placing the 2222 call and document the extension number relayed to allow ongoing communication.

4.2.12 The correctly labelled sample must be taken to the laboratory urgently by the emergency porter and handed to the Transfusion Laboratory BMS.

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4.2.13 Adhere to Trust policy for requesting, taking and labelling blood samples.
(See Section 11)

4.2.14 Sample labelling should include the details in the table below, hand written at the bedside.

<p>Known Patient</p> <p>Surname (in full) Forename (in full) Date of birth Patient Identification Number (District number) Sex Date and time of sample Signature of the person taking the sample on the bottle and the form</p>	<p>Unknown Patient</p> <p>If the patient is unknown, the following data in line with the MFT Temporary Identification Criteria for Unknown or Unidentified Patients must be included:</p> <p>Assigned surname - a spelled out number from one to ninety-nine, with the MFT hospital site eg. Onemri</p> <p>Assigned forename - derived from the phonetic alphabet eg. BRAVO</p> <p>DOB – estimated year of birth with today's date/month (or 1 Jan)</p> <p>Patient Identification Number - District number</p> <p>Sex – if known</p> <p>Date and time of sample</p> <p>Signature of the person taking the sample</p> <p>On confirmation of patient details inform the Transfusion Laboratory and repeat sampling with full details opposite.</p>
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4.3 Ordering Blood and Blood Components

In the major haemorrhage situation, order blood and blood components in the form of major haemorrhage packs.

4.3.1 **Major Haemorrhage Pack 1** consists of 4 units of red cells (Emergency Group O blood or group specific depending on availability) and 4 units of group specific (or universal) Fresh Frozen Plasma (FFP).

4.3.2 Platelets may be requested if clinically indicated e.g. Platelets $<75 \times 10^9$ /l. Cryoprecipitate may be requested if clinically indicated e.g. fibrinogen <1.5 g/L (<2 g/l in obstetric patients) or based on TEG/ROTEM results.

4.3.3 If the patient continues to bleed after receiving the first pack, then order **Major Haemorrhage Pack 2**. This consists of 4 units of red cells, 4 units of FFP and 1 adult therapeutic dose of platelets. Cryoprecipitate may be added if fibrinogen < 1.5 g/L (<2 g/L in obstetric patients) or indicated from TEG/ROTEM results (see section 4.10.1 below)

4.4 Red cell availability

4.4.1 Emergency Group O blood is available immediately and should be used in emergency until group specific blood can be provided from the laboratory.

On Oxford Road Campus site:

4 units of Group O D Positive and 4 units of O D Negative in Adult ED blood fridge
 2 units of Group O D Positive and 2 units of O D Negative in General Theatres MRI second floor blood fridge
 2 units of Group O D Negative in Central Delivery Unit blood fridge
 6 units of Group O D Negative, two of which are irradiated and 4 Group O D Positive in Blood Transfusion Laboratory

On Trafford site:

8 units Group O D Negative - Only in the transfusion laboratory

On Wythenshawe site:

2 units Group O D Negative in ED blood fridge

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2 units Group O D Negative in Acute theatre blood fridge
 2 units Group O D Negative, 1 of which is suitable for neonates in F block theatre
 2 units in Group O D Negative Cardiac theatre
 2 units Group O D Negative in TDC theatre
 2 units Group O D Negative, 1 of which is suitable for neonates in Maternity

On North Manchester General Hospital site:

4 x group O D negative units for ADULT use in the Hospital Transfusion Laboratory
 2 x group O D negative units for ADULT use and 2 x group O D negative paedipacks for neonatal /paediatric use in the Maternity Delivery suite satellite blood fridge

4.4.2 Group specific blood can be issued within 30 minutes of receiving a sample in the laboratory (two independent samples will be required if the patient's blood group is not known). A retrospective crossmatch, which takes around 1 hour, will be performed.

4.5 Fresh frozen plasma (FFP)

Once the blood group is known, 4 units of FFP will be thawed for each major haemorrhage pack. FFP should be available within 40 minutes of the patient's sample arriving in the laboratory.

4.5.1 Pre-thawed FFP will be available for trauma related major haemorrhage.

4.6 Platelets

One adult therapeutic dose (ATD) of platelets will be available as part of major haemorrhage **pack 2** but can also be requested earlier if clinically indicated.

4.6.1 Availability will depend on the blood group of the patient and whether platelets of the appropriate group are in stock. In an emergency, Group A platelets can be used for patients of other groups. If platelets need to be ordered this can take up to one hour.

4.6.2 Platelets must not be transfused through giving sets that have already been used to administer red cells.

4.6.3 A sterile giving set with a 170 – 200 micron filter must be used when transfusing all blood/blood components.

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4.7 When the blood or blood component is ready:

- 4.7.1 When the Communication Lead phones with the initial request, the Transfusion BMS will give an estimated time of when the blood/blood components will be ready to collect.
- 4.7.2 Group specific blood will be issued once two separate samples have been grouped, but before the full cross match is resulted. The crossmatch is a test to establish compatibility. The result might determine that the donor blood selected is unsuitable. On completion of the crossmatch do not assume that fully compatible blood will be available. It may be necessary for the transfusion laboratory to recall issued units to replace with more suitable products.
- 4.7.3 On receipt of red blood cells and fresh frozen plasma, any units that are not to be transfused immediately must be placed in the nearest blood satellite fridge (within 30 minutes of removal from the laboratory fridge). Platelets are stored at room temperature and can be returned to the transfusion laboratory, within 1 hour, in order to reduce wastage.
- 4.7.4 During major haemorrhage situations it may not be possible to ensure a written authorisation of blood and blood components. It may be verbally authorised by the medical lead at the bedside. This should be documented in the patients notes in retrospect when time permits.
- 4.7.5 Traceability of all blood components is a legal requirement in accordance with The UK Blood Safety and Quality Regulations 2005. Allocated and unallocated emergency units have different requirements and must not be fated in accordance with routine procedures. See 4.16.2 for further guidance.
- 4.7.6 Bedside checks and positive patient identification must be undertaken prior to administration of blood/blood components.

4.8 Ongoing Assessment and Resuscitation

If the patient continues to bleed, further blood samples should be taken FBC, U&E, PT, APTT, and fibrinogen and sent urgently to the laboratory via the porter. The following near patient tests should be undertaken: ABG, including lactate and Ca²⁺, TEG/ROTEM if available.

- 4.8.1 Further blood and blood components can be ordered in Major Haemorrhage Packs (equivalent to pack 2) if the bleeding continues.

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- 4.8.2 Normocalcaemia (ionised calcium > 1 mmol/l), and a pH>7.35 should be targeted. To correct low ionised calcium, give 10 mls 10% Calcium Chloride IV over 10 minutes.

4.9 Management of abnormal haemostasis

The use of the Major Haemorrhage packs should reduce the risk of coagulopathy. However, if after transfusion of Major Haemorrhage Pack 2 there is evidence of ongoing coagulopathy (microangiopathic bleeding, PT / APTT ratio > 1.5, platelets < $75 \times 10^9 / l$, fibrinogen < 1.5g/l), advice from the Haematologist on call should be sought.

- 4.9.1 If the fibrinogen is less than 1.5 g/l (less than 2g/l in obstetric patients), or as guided by the ROTEM/TEG results, cryoprecipitate should be ordered. Cryoprecipitate is stored at room temperature and does not need to be placed in a blood fridge. Check the altered expiry date and time (this will be 4 hours from thaw time) prior to administering.
- 4.9.2 Prothrombin Complex Concentrate (PCC) and vitamin K are indicated to reverse the effects of warfarin in patients with major haemorrhage. Dose information can be found in the Trust document Management of ADULT patients on warfarin or acenocoumarol (sinthrome®) presenting with bleeding, potential bleeding or a high INR in the absence of bleeding

On Oxford Road Campus

PCC is located in the adult emergency department fridge MRI and the transfusion laboratory. It should be requested through HIVE and confirmed by phone with the transfusion laboratory.

On Trafford Campus

PCC is available in the blood bank during the hours of 07:00 – 21:00. Between 21:00 and 07:00 hrs it can be accessed by the out of hours team from the blood bank collection fridge

On Wythenshawe Site

An emergency stock of PCC is available in the cardiac theatre blood fridge for CTCCU and CT theatres use only. For all other areas PCC must be requested from the transfusion laboratory.

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On the North Manchester General Hospital site:

PCC must be requested from the transfusion laboratory.

- 4.9.3 Discuss the management of patients on direct oral anticoagulants (DOAC) (rivaroxaban, apixaban, edoxaban and dabigatran) with the haematologist on call. Trust guidelines are available for the reversal of DOACs in the context of major haemorrhage.
- 4.9.4 Andexanet is available for reversal for life-threatening or uncontrolled gastrointestinal bleeding for patients on rivaroxaban and apixaban. Separate Trust Guidelines are available for this. These patients should be discussed with the Haematologist on call.
- 4.9.5 Recombinant Factor VIIa is licensed for use in haemophilia patients with inhibitors for the treatment of bleeding or as prophylaxis for surgery.

4.10 Definitive Management Plan

- 4.10.1 Transfer to theatre to stop the haemorrhage should not be delayed if clinically indicated.
- 4.10.2 Patients who have experienced major haemorrhage should be managed by experienced staff in a suitable setting.
- 4.10.3 Once the bleeding has been brought under control and the patient has been stabilised, there is an increased risk of thrombotic complications, and thromboprophylaxis should be prescribed.
- 4.10.4 Consider if the patient requires transfer from the Trafford division to the Oxford Road Campus. Ensure all relevant persons are contacted, including the laboratory and the out of hours team, if blood is required for transfer.

4.11 Aims of Therapy – stop the bleeding and reversal of coagulopathy:

The following targets should be aimed for:

Parameter	Target
Hb	80-100g/l
Platelets	>75 x 10 ⁹ /l
PT / APTT ratio	< 1.5
Fibrinogen	>1.5 g/l (>2g/l for obstetric patients)

Ionised Calcium	>1mmol/l
Lactate	< 2 mmol/l
Temp	>36°C
pH	>7.35 (on ABG)

4.12 Cell Salvage - Autologous Transfusion

4.12.1 Intraoperative blood salvage should be considered when there is major blood loss. An advantage of cell salvage is that it provides a ready supply of warm blood that is the patient's own and therefore reduces the risk of transfusion reaction. Remember that only washed red cells are transfused, and there is a need to consider replacement of additional FFP and platelets in the major haemorrhage situation; 250ml of salvaged red cells is equivalent to one unit of donor blood from the transfusion laboratory.

4.12.2 Cell salvage is contra-indicated if wounds are heavily contaminated and cannot be used in patients with abdominal trauma who have ruptured their bowel or those with thoracic trauma and have oesophageal or lung damage.

On Oxford Road campus: Contact the perfusionist to run the cell saver on extension 65778 between 09:00 – 17:00hrs and via switchboard after 17:00hrs. At weekends and bank holidays contact the perfusionist via switchboard. Consider if there are theatre personnel trained to commence this process prior to the perfusionist's arrival.

On Wythenshawe and NMGH site: Contact the perfusionists via switch board

4.13 Patient Care

4.13.1 Documentation must be made in the patient's notes stating the reason for use of the major haemorrhage packs.

4.13.2 Relieve anxiety for the patient with good communication to them if their condition permits.

4.13.3 If appropriate at the time, identify any specific requirements taking into consideration language and cultural needs: if English is not the first language an interpreter must be contacted unless the situation does not allow e.g. emergency resuscitation.

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4.16 Stand Down

- 4.16.1 Once the bleeding is brought under control and the patient has been stabilised or if the patient has died, the transfusion laboratory and the emergency response porter must be stood down. The Transfusion Biomedical Scientist will be on standby throughout the major haemorrhage and it is essential that they are informed when they are no longer required in order to avoid delays in providing blood products for other patients. Any unused products must be returned to the transfusion laboratory.
- 4.16.2 Traceability of all blood components is a legal requirement in accordance with The UK Blood Safety and Quality Regulations 2005. All blood components must be prescribed and evidenced in the patient notes. Blood tags must be fated as below:

- **Patient details already printed on the blood tag:** The final fate of these units must be carried out in Bloodtrack autofate. If Bloodtrack is not available return blood tags to the transfusion laboratory.
- **Emergency units** are “unallocated” and require ward staff to complete the blood tag with a minimum of patient forename, surname, district number and D.O.B. An addressograph or patient sticker can be used for this purpose. These tags **MUST** be returned to the Transfusion laboratory as soon as possible following transfusion.

4.17 Audit

- 4.17.1 Switchboard will inform the Transfusion Practitioners (by faxing a daily report) when the 2222 major haemorrhage number has been used, so that a sample of activations of the pathway can be monitored. The Transfusion Practitioners will collect the relevant monitoring data using a standard proforma. In addition the Transfusion Laboratory staff will identify the episodes where multiple products were issued, but the pathway was not activated. The information will be collated and a report submitted to the Hospital Transfusion Committee. The information will also be anonymised and submitted to the Regional Transfusion Committee as required.

4.18 Incident reporting

- 4.18.1 An incident should be reported through the Trust Ulysses system if there has been patient harm as a result of delayed blood transfusion or transfusion

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reaction.

- 4.18.2 The Transfusion Team will report the incident to SHOT and SABRE if there has been patient harm as a result of delayed blood transfusion or transfusion reaction.

5 Equality, Diversity and Human Rights Impact Assessment.

- 5.1 This Policy has been equality impact assessed by the author using the Trust's Equality Impact Assessment (EqIA) framework.
- 5.2 The completed Equality Impact Assessment has been completed and submitted to the Equality and Diversity Department for 'Service Equality Team Sign Off'

6 Consultation, Approval and Ratification Process

The following groups have been included in the review process prior to ratification:

- Hospital Transfusion Team
- Hospital Transfusion Committees
- Group Medical Directors (Chair)
- Chief Nurse
- Chief Operating officer
- Medical Director MRI
- Medical Director of St Mary's
- Medical Director of CSS
- Medical Director of Wythenshawe and Trafford
- Medical Director RMCH
- Haematology Laboratory Manager
- Chief Executive for CSS
- Clinical Director Haematology
- Clinical Director Emergency Services
- Clinical Director Anaesthesia
- Clinical Director Critical Care
- Director Clinical Effectiveness
- Head of Patient Safety and Risk Management

This document is ratified by the MFT Hospital Transfusion Committee following

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review by the above members of the Trust. For review 3 yearly or before if new guidance emerges.

7.0 Dissemination and Implementation

7.1 Dissemination

- This document will be placed on the Trust Intranet
- Divisional notification and dissemination of updated document
- Notification to the Medical Director and Director of Nursing (Adults)

7.2 Implementation of Procedural Documents

- Blood Transfusion Chief/Lead BMS will ensure this document is placed on Q-Pulse with requirement for all Hospital Transfusion Laboratory staff to acknowledge receipt.
- Policies on the Trust intranet signposted in training sessions and in Clinical Mandatory Training.
- Action cards within document for use by clinical staff to guide them in major haemorrhage pathways.
- Transfusion Practitioners available to offer supplemental training to clinical areas if required.

8 Monitoring Compliance of Procedural Documents

8.1 Process for Monitoring Compliance.

As a minimum include the review and monitoring arrangements:-

- 8.1.1 The Hospital Transfusion Committee is responsible for monitoring compliance with the Adult Major Haemorrhage Guideline at Corporate Level.
- 8.1.2 This will be completed by use of an audit proforma completed after a sample of massive haemorrhage episodes.
- 8.1.3 Frequency of monitoring will be on an annual basis with a report presented to the Hospital Transfusion Committee (HTC).
- 8.1.4 Audits will be evaluated and action plans formulated with feedback given to the HTC and specific areas via the clinical audit days and governance forums. Any shortfalls identified will have an action plan put in place to address these which will have timescales included for re-audit / monitoring.

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9 Standards and Key Performance Indicators ‘KPIs’

- 9.1.1 The Current policy is available on the Trust Intranet.
- 9.1.2 To continue the training of staff and ensure staff understand and are familiar with the guidelines. This will be undertaken in the form of Emergency drills in key clinical areas twice yearly. (Divisions)
- 9.1.3 To raise awareness of the guideline in clinical mandatory and Divisional induction training sessions. (Hospital Transfusion Team)
- 9.1.4 To undertake clinical audit of the effectiveness of the guideline (Hospital Transfusion Team in collaboration with the MCS's and the Regional Transfusion Committee)
- 9.1.5 To investigate and undertake trend analysis on all adverse incidents reported related to major haemorrhage situations, identify lessons learnt (Hospital Transfusion Team in collaboration with MCS's).

10 References

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Joint United Kingdom Blood Transfusion and Tissue Transplantation Services Professional Advisor Committee (JPAC) Transfusion Handbook. Accessed via internet on 11/5/21
<https://www.transfusionguidelines.org/transfusion-handbook/7-effective-transfusion-in-surgery-and-critical-care/7-3-transfusion-management-of-major-haemorrhage>

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11 Associated Trust Documents

- Adult red cell guidelines
- Hospital Transfusion Laboratory Sample Acceptance and Requesting Policy
- Direct Oral Anticoagulants (DOACs) - Guidelines for the Management of Bleeding and Reversal for Emergency and Urgent Surgery.
- Guidelines for the Clinical use of Platelets in Adults
- Guidelines for the use of Fresh Frozen Plasma (FFP), Solvent detergent FFP (Octaplas) and Cryoprecipitate – Adults
- Management of ADULT patients on warfarin or acenocoumarol (sinthrome®) presenting with bleeding, potential bleeding or a high INR in the absence of bleeding
- Management of Postpartum Haemorrhage
- Guidelines for the treatment of patients who refuse blood and blood components
- Policy to Consent for Examination or Treatment
- Acute Upper Gastrointestinal Haemorrhage (Adults)
- Major haemorrhage flow charts
- Wythenshawe Trust Policy and ORC Transfusion Policy

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