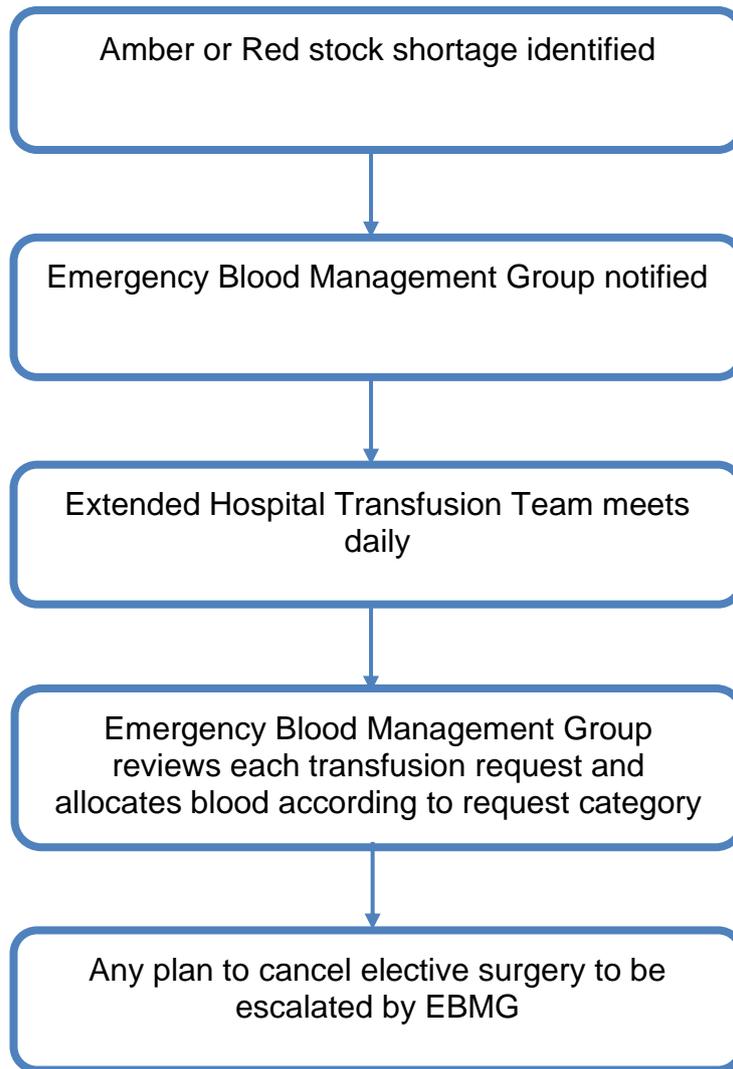


# **Emergency Blood Management Plan**

**V2.0**

**January 2022**

## Summary



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# 1. Introduction

- 1.1. This framework is designed to ensure that National health Service Blood and Transplant (NHSBT) and hospitals in England work in a consistent, integrated manner to manage blood shortages. The appropriate use of donor blood and blood products with the use of effective alternatives to blood are important public health and clinical governance issues. This plan is designed to build on actions taken by hospitals to improve transfusion safety and effectiveness in line with the 'Better Blood Transfusion: Safe and Appropriate Use of Blood 2007/001' initiative. The National Health Service Blood and Transplant (NHSBT) service is largely self-sufficient in blood and blood components, who collect blood from donors in England for the vast majority of routine demand for red blood cells, platelets and plasma.
- 1.2. The National Blood Transfusion Committee (NBTC) has directed hospitals to have an Emergency Blood Management Plan (EBMP) in place for times of blood shortage nationally. Blood shortage may be precipitated by a number of factors including but not limited to terrorist attack, pandemic disease or adverse weather conditions. The COVID-19 pandemic in 2020 has also prompted concerns around red cell shortages that may be prolonged.
- 1.3. Local blood shortages may prompt activation of the EBMP within RCHT, for example in times of adverse weather, when restocking from Plymouth or Filton Blood Centres is impossible.
- 1.4. A subgroup of the National Blood Transfusion Committee has produced a contingency plan for the management of blood shortages. There are three main principles:
  - Hospitals comply with Patient Blood Management principles and only transfuse when appropriate and according to British Society of Haematology (BSH) Guidelines.

That during shortage -

- NHSBT keep more of the national blood pool to allow maximum flexibility to move it to where it is needed
- A structure exists within hospitals to ensure that available blood is used on those who most need it.

The plan identifies three levels of activity as outlined below.

- **Green:** Normal circumstances where supply meets demand
- **Amber:** Reduced availability of blood for a short or prolonged period 67% normal stock
- **Red:** Severe, prolonged shortages ~ 40% normal stock

- 1.5. If national red cell stocks fall to less than two days for red cells, 0.5 days for platelets, or an imminent threat to the blood supply is identified, NHSBT will communicate a move to Amber phase. This may apply to either a single blood

group or to all blood groups (see section 6.7 and 6.8).

1.6. This version supersedes any previous versions of this document.

## **2. Purpose of this Policy/Procedure**

- 2.1. This framework is designed to ensure that National Health Service Blood and Transplant (NHSBT) and hospitals in England and Wales work in a consistent, integrated manner to manage blood shortages.
- 2.2. NHS emergency planning requires the development of contingency plans to ensure the effective use of available blood and blood components when blood stocks fall to very low levels. Pre-determined plans will be critical to ensuring transfusion support remains available for the patients who need it most.
- 2.3. Hospitals are required to produce an Emergency Blood Management Plan so that this can be implemented if and when any shortage occurs. This plan will identify key members of staff, lines of communication and actions that will need to be taken during the period of shortage. When implemented the plan's success in reducing the blood being used will be monitored by measuring the reduction in blood issues from the NHSBT. Hospitals and NHSBT should work together to reduce the risk of red cell shortages through the management of both the supply and demand for blood. Overseeing this process will be NHS England who will advise Clinical Commissioning Groups (CCGs) on strategies to manage the blood supply to hospitals that are not making the required reductions.

## **3. Scope**

This plan affects all parts of the Trust where transfusion takes place.

## **4. Definitions / Glossary**

- BMS – Biomedical Scientist
- BSH – British Society of Haematology
- CCG – Clinical Commissioning Group
- EBMA – Emergency Blood Management Arrangements
- EBMG – Emergency Blood Management Group
- EBMP – Emergency Blood Management Plan
- HTC – Hospital Transfusion Committee
- HTT – Hospital Transfusion Team
- MSBOS – Maximum Surgical Blood Ordering Schedule
- NBTC – National Blood Transfusion Committee
- NHSBT – NHS Blood and Transplant

- RCHT – Royal Cornwall Hospitals NHS Trust

## 5. Ownership and Responsibilities

- 5.1. To oversee the response, there are two key groups: The 'Hospital Transfusion Team', and the 'Emergency Blood Management Group'.
- 5.2. The plan has been produced and will be managed by the Hospital Transfusion Team (HTT), including the Consultant in charge of Transfusion, the Transfusion Laboratory Manager and the Transfusion Practitioners. Updates and amendments will be sanctioned through HTT in the first instance but also through the Hospital Transfusion Committee (HTC) including wider ratification.

### 5.3. *Role of the Transfusion Practice*

Responsibility for Transfusion Practice lies with the Head of Transfusion, one of the Consultant Haematologists. He / she is answerable to the Medical Director(s) of the Trust.

### 5.4. *Role of the Managers*

Line managers are responsible for:

- Ensuring all relevant staff are aware of this plan

### 5.5. *Role of the Medical Director*

The Medical Director is responsible for:

- Ensuring that an Emergency Blood Management Group is identified
- Convening the Emergency Blood Management Group in the event of notification of a Red Alert

### 5.6. *Role of the Blood Bank Laboratory Manager*

The Blood Bank manager, or deputy, is responsible for:

- Informing Consultant Haematologist of shortage status
- Assisting with roles described for Blood Bank staff
- Regular (at least once daily) communication with the NHSBT to determine availability of blood and components

### 5.7. *Role of the Hospital Transfusion Team*

The Hospital Transfusion Team is responsible for:

- Reviewing requests for blood and blood components
- Monitoring of blood availability and usage

- Communicating with clinical staff regarding the current situation

### **5.8. Role of the Consultant Haematologist**

The Consultant Haematologist is responsible for:

- Taking on the role of Chair of EBMG
- Initially (i.e. before the EBMG sits), reviewing and restricting outstanding requests for transfusion in conjunction with the Blood Bank Manager and with input from the Chairman of the EBMG if required

### **5.9. Role of the Hospital Transfusion Committee**

[Click here for link to Terms of Reference](#)

### **5.10. Role of the Emergency Blood Management Group (EBMG)**

The EBMG is responsible for:

- Implementing the Emergency Blood Management Plan (EBMP)
- Assessment of requests for blood and components
- Monitoring compliance of the EBMP

### **5.11. Role of Senior Clinical Staff**

- Once the arrangements have been formulated, they should be managed by the Hospital Transfusion Team and re-enforced when required by senior clinical staff representing the main users of blood

### **5.12. Role of Duty Consultants**

Duty Consultants are responsible for:

- Reviewing and restricting blood requirements as per algorithms, MSBOS and EBMA criteria
- Liaising with relevant members of the clinical and management teams
- Feedback to Bed Management Team re clinical priorities/cancellations of patients
- Feedback regarding the impact of restrictions to EBMG via Surgical and Medical representatives

### 5.13. ***Role of Individual Staff***

All staff members are responsible for:

- Ensuring that the principles of Patient Blood Management are adhered to and that all transfusion across the Trust is appropriate
- Conserving blood stocks as described by this plan during both red and amber alerts

### 5.14. ***Role of Blood Bank Staff and Transfusion Practitioners***

- Return of blood from satellite fridges that have reached the 24-hour dereservation period (this may be changed to 12 hours)
- Production, maintenance and control of a current log of bloodstocks, detailing group and age of units and provide this information at the EBMG
- Collation of blood requirements as received in the laboratory prior to the EBMG. To prioritise these with reference to time required. For requests required prior to the EBMG meeting, to provide supporting evidence of appropriateness of request i.e. whether patient is bleeding, Hb level etc, and present this information to the Consultant Haematologist.

### 5.15. ***Role of the Hospital On-Call Manager***

The Hospital On-Call manager is responsible for:

- Support arrangements e.g. press releases, situation reports and catering arrangements

5.16. Specific roles and responsibilities are detailed further in the appropriate action cards in appendices 3-5.

## **6. Standards and Practice**

### 6.1. ***Emergency Blood Management Plan (EBMP)***

6.1.1. This policy is designed to ensure that in the event of a blood or platelet shortage, blood and platelets remain available for essential transfusions and that overall usage is reduced to ensure a supply for urgent cases. The plan is structured in three phases with a final phase of recovery to prevent a sudden increase in usage until blood stocks are back to near normal.

6.1.2. Phase 1-Green: Normal circumstances where supply meets demand:

- No shortage of blood components or blood products exists.

- NHSBT is able to provide optimal inventory service according to requests received.
- Strategies to reduce wastage and ensure that red cells and platelets are used appropriately should continue.

6.1.3. Phase 2-Amber: Reduced availability for a short or prolonged period:

- NHSBT will contact the duty Blood Bank Manager, on call Consultant Haematologist or Transfusion Practitioner informing that there is a shortage in red cell or platelet stocks.
- NHSBT will require RCHT to call an Amber alert.
- RCHT will be required to reduce stock levels and reduce usage of those components affected by the shortage.
- Local actions may be required to reduce and prioritise usage.
- When the stock levels begin to rise it is crucial that we do not resume usage of product at or near normal levels but that a gradual return to normal usage is undertaken.

6.1.4. Phase 3-Red: Severe, prolonged shortage of blood:

- NHSBT will contact the duty Blood Bank Manager, on call Consultant Haematologist, Transfusion Practitioner and On-call Director to report that national red cell or platelet stocks have fallen to levels requiring implementation of the Emergency Blood Management Plan.
- RCHT to instigate Emergency Preparedness Resilience and Response arrangements co-ordinated through the Major Incident Control Centre.
- Normal usage of blood and blood products must stop immediately.
- Necessary actions to be taken to protect stocks and control how they will be used.
- When the stock levels begin to rise it is crucial that a gradual return to normal usage is undertaken

6.1.5. Recovery Phase:

- When the stock levels begin to rise it is crucial that we do not resume usage of product at or near normal levels but that a gradual return to usage is undertaken
- NHSBT will indicate when stocks are stable again and a gradual return to normal levels of usage can begin.

- Hospitals will adopt a phased return to normal activity levels; in particular, elective surgery backlogs should not be compressed into the immediate post recovery period.
- The EBMG will convene to review the effect of the blood shortage and amend the Emergency Blood Management Arrangements as necessary.

6.1.6. The following plan gives a description and actions to be taken for each of these phases.

## 6.2. **Emergency Blood Management Arrangements**

6.2.1. It is recommended that each hospital should establish as part of their overall emergency planning, an Emergency Blood Management Group (EBMG) with representation from the Medical Director, operational and risk management, key clinical users and the Hospital Transfusion Team.

6.2.2. The responsibility of the group is to provide strategic guidance and formulate arrangements to manage the appropriate use of blood in each operational phase, as part of their existing emergency plans.

6.2.3. The Emergency Blood Management Group consists of:

Director of Operations / Chief Operating Officer
Medical Director or representative
General Manager of each Care Group
Chief Nurse or Deputy
Chair of the Hospital Transfusion Committee
Consultant Haematologist responsible for Transfusion
Blood Transfusion Laboratory Manager (or Deputy)
Lead Transfusion Practitioner (or Deputy)
Administrative/Clerical Support

6.2.4. It is essential that the EBMA have senior hospital management support (i.e. On-call Director and Medical Director) to ensure their effectiveness when they are called into action. Clinical staff should be aware of their existence and be willing to accept that a decision-making process, however difficult, is necessary when the supply of blood is limited.

6.2.5. Should a national blood shortage occur, NHSBT will activate their emergency plan and will notify the duty Blood Bank Manager, on call Consultant Haematologist, Transfusion Practitioner or On-Call Director to implement the emergency blood management plan.

6.2.6. The Blood Transfusion Manager or their deputy will make contact with:

- On-call Consultant Haematologist
- Chair of HTC

- Director of Operations / Chief Operating Officer
  - Medical Director
- 6.2.7. Out of hours, the on-call BMS will notify the Blood Transfusion Manager who will make contact with the above.
- 6.2.8. Other members of the EBMG will then be notified as soon as possible (see table above).
- 6.2.9. The Consultant Haematologist, Blood Transfusion Manager, the Transfusion Practitioner(s) and Consultant Anaesthetist are the appropriate members of the Hospital Transfusion Team (HTT) and will meet in the Haematology Clinic Seminar room Link Corridor, which will be assigned as the HTT Control Centre. If there is another meeting occupying the room (that is not incident related) they are to vacate the room to enable the HTT to take over the Control Centre. At the same time a 'Major Incident Standby' callout cascade should be undertaken by Switchboard, to ensure senior representation from the outset.
- 6.2.10. When operational the contact details for the Seminar room are:
- Microsoft Teams account** 'Trecarrelhsepsmr'
- Blood Bank Managers Tel:** 07919 125023
- Duty On-Call Consultant Tel:** 07833 701622
- HTC chair Tel:** via switchboard
- 6.2.11. The Medical Director will identify an anaesthetist, ED physician, surgeon and medical physician to join the HTT to review Amber or Red phase on a day-to-day basis. The overall responsibility of the plan rests with the EBMG.
- 6.2.12. There will be daily review by the extended HTT for as long as the Trust remains in Amber or Red.
- 6.2.13. Elective surgery may need to be cancelled. This will be escalated by the extended HTT via anaesthetist and surgeon to Theatre management.
- 6.2.14. The NBTC have EMBA computer screensavers available to inform staff, if required:
- <https://www.transfusionguidelines.org/uk-transfusion-committees/national-blood-transfusion-committee/responses-and-recommendations>
- 6.2.15. For blood stock levels for Green, Amber and Red see transfusion laboratory document BT-LI-32

### 6.3. **GREEN phase actions**

**The Green Phase represents normal operating circumstances.**

- Secure appropriate arrangements for Better Blood Transfusion and the appropriate use of blood.
- Maintain senior management and NHS Trust Board Commitment.
- Maintain appropriate membership and functioning of the Hospital Transfusion Committee (HTC) and Hospital Transfusion Team (HTT).
- Ensure appropriate blood transfusion policies for the effective use of donor blood are in place, implemented and monitored.
- Provision of education and training to all staff involved in the process of blood transfusion and is included in the induction programmes for new staff.
- Maintain links with other local hospitals and investigating the best policies for moving stocks between sites.
- Ensure the appropriate use of blood and the use of effective alternatives in every clinical practice where blood is transfused.
- Practice within existing national guidance on the appropriate use of blood and alternatives.
- Maximising the use of intra-operative cell salvage for surgery.
- Provide guidance for the medical and surgical use of red cells, and other blood components such as platelets and fresh frozen plasma.
- Regularly monitor and audit of usage of red cells, platelets and fresh frozen plasma in all clinical specialities.
- Empower blood transfusion laboratory staff to ensure that appropriate clinical information is provided with requests for blood transfusion.
- Empower blood transfusion laboratory staff to ask clinicians about appropriateness of requests for transfusion against local guidelines for blood use.
- Secure appropriate and cost-effective provision of blood transfusion and alternatives in surgical and obstetric care.
- Promote procedures for the pre-operative assessment of patients for planned surgical procedures to allow the identification, investigation and treatment of anaemia and the optimisation of haemostasis.
- Implementing hospital transfusion indication codes (appendix 6) as recommended by the National Blood Transfusion Committee to

ensure that each request for transfusion clearly gives the reason for transfusion of blood components.

- Practice blood conservation strategies including the use of point-of-care testing for haemoglobin concentration and haemostasis and alternatives to donor blood such as peri-operative cell salvage and pharmacological agents such as anti-fibrinolytic and intravenous iron.
- Promote procedures for the identification and management of maternal anaemia in particular with correction of iron deficiency in the antenatal and postnatal period.

#### 6.4. **AMBER phase actions**

##### 6.4.1. **The Amber Phase represents a reduced availability for a short or prolonged period.**

6.4.2. NHSBT will take action to maximise production and increase collection of red cells and platelets during this time.

6.4.3. The HTT will review compliance of the following:

- Continuation of elective surgery will depend on blood stock levels.
- All clinical areas to strictly apply guidelines on blood product use and reduce transfusion triggers where possible (see section 6.10 and 6.11).
- All requests for blood or platelets must have detailed and legible clinical details, a pre-transfusion / pre-operative haemoglobin or platelet count concentration.
- All requests for units of platelets in the hospital must be made via a named senior Clinician, such as a Consultant Haematologist. Requests to NHSBT will be referred to a NHSBT Consultant who may discuss the requirement with the requesting clinician.
- Operation by blood group for elective surgery depending on stock level. No surgery can go ahead without appropriate blood or platelets being identified as available by the transfusion laboratory.
- In cases of actual or potential massive blood loss, a Consultant Haematologist must be contacted by the referring team to allow planning of blood product provision and give advice about blood conserving measures.
- Reduction of the reservation period for blood to 12 hours wherever possible.

- If a reduction of up to 33% in use is required, then in addition to the above:
- Stop all transfusions in Category 3 (see section 6.10 and 6.11) and ensure review of theatre lists via daily meeting.
- Blood Bank to stop routine stockholding of platelets – order only for a specific identified requirement or for a unit of platelets to be “on standby” for a specific procedure.
- During Amber phase any platelets issued from NHSBT will have a maximum expiry of 24 hours. This will ensure the national stock of platelets held by NHSBT is available to all hospitals.
- Platelets to be issued to category 1 and 2 patients only (see section 6.11).
- Blood bank will prepare to:
  - Cease requesting “long dated” platelets.
  - Accept Leucodepleted instead of CMV negative platelets.
  - Accept platelets of a different ABO group (in line with BSH guidelines).
  - Accepting Rh D positive platelets where Rh D negative are not available and administering prophylactic anti-D where applicable (250 IU anti-D will cover 5 adult units of platelets).
  - Prohibit use of platelets for prophylaxis.

## 6.5. **RED phase actions**

- 6.5.1. **The Red Phase represents a severe and prolonged shortage of blood.**
- 6.5.2. NHSBT will communicate the nature of the shortage and the actions that need to be taken by the Trust.
- 6.5.3. Daily review of the blood shortage and its impact on patient care via a medical assessment of all requests by a Consultant Haematologist.
- 6.5.4. Further actions include (in addition to Green and Amber actions):
  - Stop all Category 2 and 3 red cell and platelet transfusions unless specific cases authorised by the EBMG (see section 6.10 and 6.11).
  - All units of platelets used will be closely tracked to ensure that there is no wastage.

- Priority transfusion based on clinical need.
- In major bleeding, involve a Consultant Haematologist immediately to plan blood product use, consider alternative haemostatic agents and discuss when blood component support should be stopped.
- Blood Bank manager will liaise with NHSBT and local hospitals to determine if transfer of any stocks is required to make the most effective use of the available pool.
- The EBMG will review compliance with the above implementations and all blood use will be carefully audited.
- To corporately plan arrangements in the event of severe blood shortages outside the role of the HTT.
- To strategically lead the response and communications during the red phase, including overseeing media response and provision of information to patients.
- Arrange communication of Red phase throughout the Trust including the 'duty teams'.
- Monitor and audit compliance of the implementation by medical staff – responsibility for ensuring that reduction targets are met.
- Review of this plan and agreement of amendments.

## 6.6. ***RECOVERY phase actions***

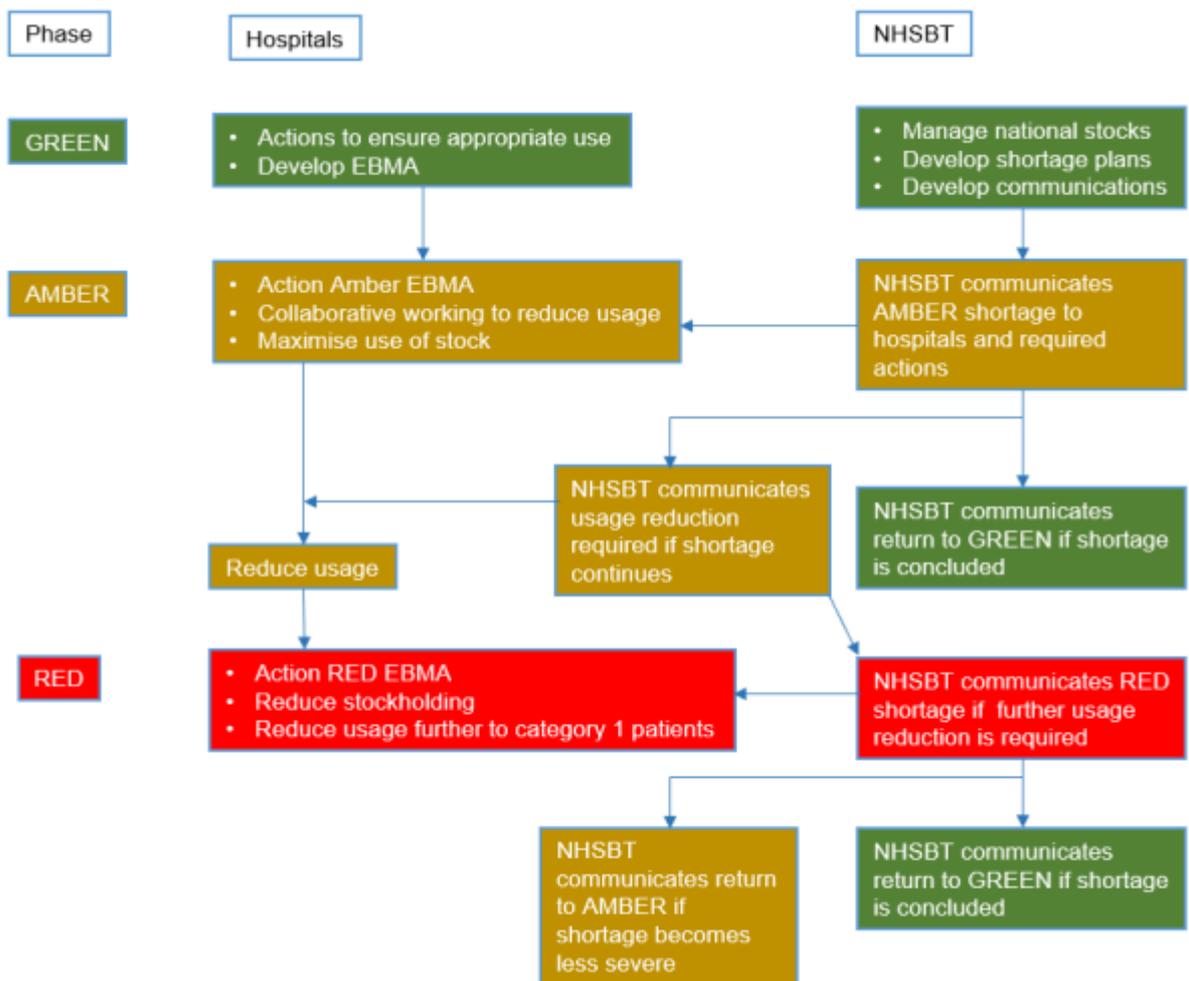
6.6.1. NHSBT will notify the Blood Bank Manager that stocks have risen to a level where hospitals can move to Amber or Green Phases.

### 6.6.2. **Local action:**

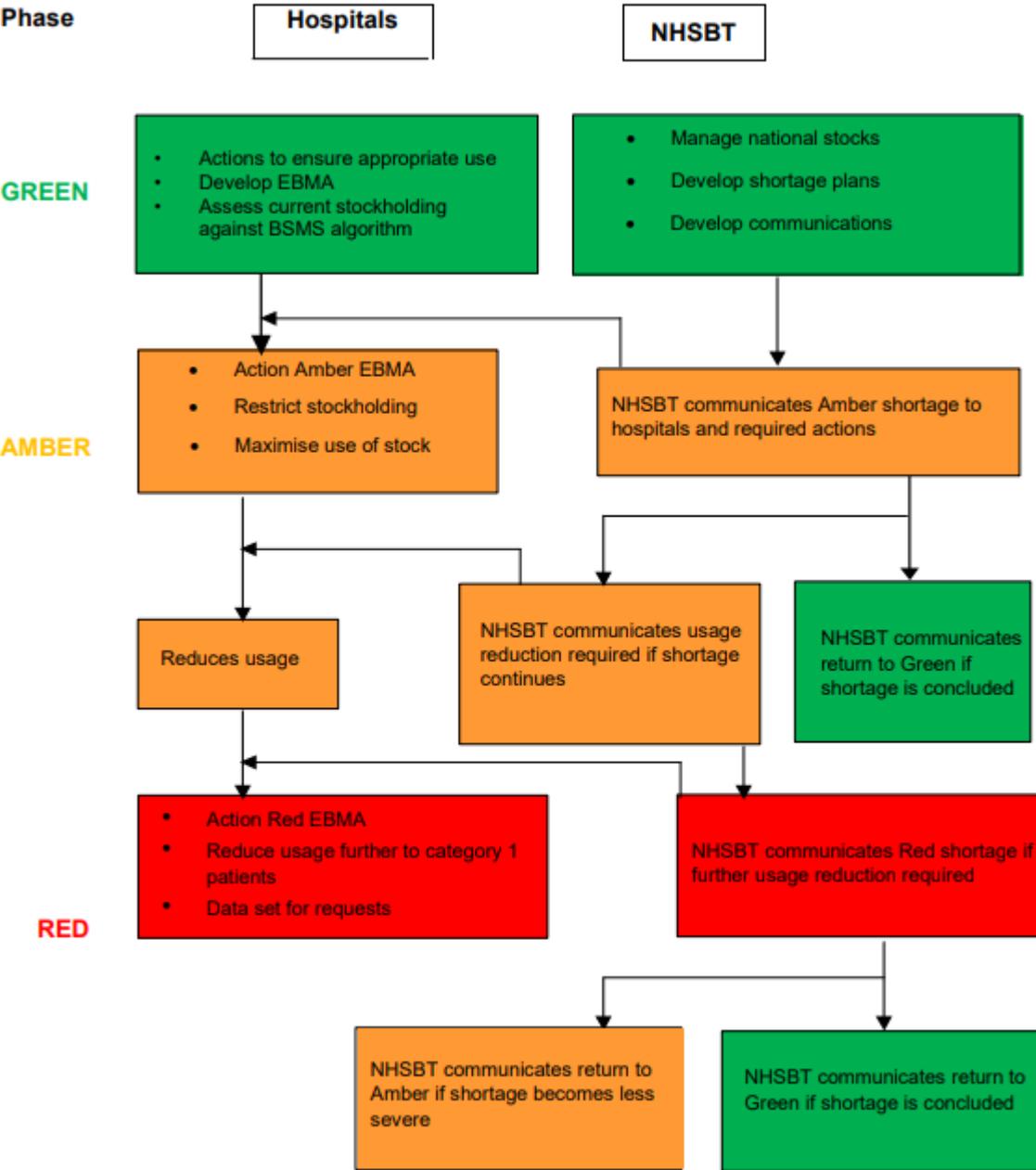
- The Blood Bank Manager (or deputy) will immediately inform, and copy the correspondence to the:
  - Haematology Consultant with responsibility for transfusion.
  - Medical Director.
  - Chief Operating Officer.
  - Transfusion Practitioners.
- The Haematology Consultant will authorise the change to the appropriate phase of the emergency blood management plan.

- All Care Group Leads and Service Line Leads will be informed of the change in status, and this will be cascaded to all staff.
- Any increases in stock levels will be done in a phased manner to ensure that demands on the NHSBT stocks are not overwhelming.
- Return to normal activity levels will also be phased. Elective surgery back-logs should not be compressed into the immediate post-recovery period.
- This process will be authorised by the EBMG and implemented under the guidance of the HTT.

### 6.7. Schematic of red cell shortage plan



### 6.8. Schematic of platelet shortage plan



## 6.9. Categories for red cell provision

Category 1	Category 2	Category 3
<b><i>These patients will remain highest priority of transfusion</i></b>	<b><i>These patients will be transfused in the Amber but not the Red phase</i></b>	<b><i>These patients will not be transfused in the Amber phase</i></b>
<p><b>Resuscitation</b></p> <p>Resuscitation of life-threatening /on-going blood loss including trauma.</p>		
<p><b>Surgical support</b></p> <p>Emergency surgery* including cardiac and vascular surgery**, and organ transplantation.</p> <p>Cancer surgery with the intention of cure.</p>	<p><b>Surgery/Obstetrics</b></p> <p>Cancer surgery (palliative).</p> <p>Symptomatic but not life-threatening post-operative or post-partum anaemia.</p> <p>Urgent*** surgery.</p>	<p><b>Surgery</b></p> <p>Elective surgery which is likely to require donor blood support</p>
<p><b>Non-surgical anaemia's</b></p> <p>Life-threatening anaemia including patients requiring in-utero support and high dependency care/SCBU.</p> <p>Stem cell transplantation or chemotherapy ****</p> <p>Severe bone marrow failure.</p> <p>Transfusion-dependent anaemias including thalassaemia and myelodysplasia.</p> <p>Sickle cell disease (SCD) patients on regular transfusion programmes for prevention of complications of SCD.</p> <p>Organ transplant</p>	<p><b>Non-surgical anaemia's</b></p> <p>Symptomatic but not life-threatening anaemia.</p>	

\* Emergency – patient likely to die within 24 hours without surgery

\*\* With the exception of poor risk aortic aneurysm patients who rarely survive but who may require large volumes of blood

\*\*\* Urgent – patient likely to have major morbidity if surgery not carried out

\*\*\*\* Planned stem cell transplant or chemotherapy should be deferred if possible.

## 6.10. Categories for platelet provision

6.10.1. The following table provides general guidance for the use of platelet transfusions in the context of reduced availability of all platelet groups.

- Category 1 patients are those with the greatest clinical need for platelet support and therefore should be given priority in red phase when considering allocation of platelets.
- In Amber phase, if reduction in usage is required, restrict to using in category 1 & 2 patients.
- Category 3 patients should be given lowest priority.

6.10.2. The use of platelets should be considered as one element in the overall management of these patients. Use should be guided by the clinical condition of the patient and laboratory/near patient testing.

<p><b>Category 1</b> (These patients will remain highest priority of transfusion)</p>	<p><b>Category 2</b> (These patients will be transfused in the Amber but not the Red Phase)</p>	<p><b>Category 3</b> (These patients will not be transfused in the Amber phase)</p>
<p><b>Massive haemorrhage &amp; Critical care</b></p> <p>Massive transfusion for any condition including obstetrics, emergency surgery and trauma, with on-going bleeding, maintain &gt; 50 x 10<sup>9</sup>/L.</p> <p>Aim for &gt;100 x 10<sup>9</sup>/L if multiple trauma or CNS trauma.</p> <p>Bleeding in the presence of sepsis/acute DIC, maintain &gt;50x 10<sup>9</sup>/L.</p>	<p><b>Critical care</b></p> <p>Patients resuscitated following massive transfusion with no on-going active bleeding, maintain &gt; 50 x10<sup>9</sup>/L</p> <p><b>Surgery</b></p> <p>Urgent but not emergency surgery for a patient requiring platelet support</p> <p><b>Transfusion triggers for invasive procedures</b></p> <p>According to BSH guidelines</p>	<p><b>Surgery</b></p> <p>Elective, non-urgent surgery likely to require platelet support for thrombocytopenia or congenital/ acquired platelet defects</p>
<p><b>Bone marrow failure</b></p> <p>Active bleeding associated with severe thrombocytopenia or functional platelet defects.</p>	<p><b>Bone marrow failure</b></p> <p>All other indications except those in category 1 or 3</p>	<p><b>*Bone marrow failure</b></p> <p>Prophylactic transfusion of stable patients following autologous stem cell transplant.</p>

<p><b>Immune thrombocytopenia</b> if serious/life-threatening bleeding</p>		
<p><b>Neonates</b></p> <p>For preterm neonates with very severe thrombocytopenia (platelet count below <math>25 \times 10^9/L</math>) platelet transfusions should be administered in addition to treating the underlying cause of the thrombocytopenia. Suggested threshold counts for platelet transfusions in other situations are given in the BSH guidelines.</p>		

\*prophylactic transfusion category should include WHO grade 1 bleeding (as in TOPPS trial). Exclusions – previous WHO > grade 3 bleed, inherited haemostatic or thrombotic disorder, requirement for therapeutic doses of anticoagulation, acute promyelocytic leukaemia, prior to surgery/invasive procedure.

## 7. Dissemination and Implementation

- 7.1. Dissemination will be via trust Emergency Preparedness, Resilience and Response Committee Meetings
- 7.2. Policy sits on the Document Library and Haematology Laboratory Quality Management System (Q-Pulse).
- 7.3. Laboratory staff have access to the document via Q-Pulse and appropriate training will be given. All members of the HTT and HTC will be updated on the contents. All transfusion competent staff will be made aware of this document during mandatory training.

## 8. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Policy will be monitored on an ongoing basis if the EBMP is activated
Lead	Hospital Transfusion Team
Tool	Check of appropriateness of all patients transfused during EBMP activation as part of the issue of blood
Frequency	This will be ongoing each time blood is requested
Reporting arrangements	Hospital Transfusion Committee will review any activation of the EBMP
Acting on recommendations and Lead(s)	Hospital Transfusion Committee will review any activation of the EBMP
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within 6 months by the Blood Bank Manager. Lessons will be shared with the Regional Transfusion Committee and may be for wider dissemination to the National Transfusion Committee.

## 9. Updating and Review

- 9.1. This section covers information regarding the review process. All policy documents should be reviewed no less than every three years. Where appropriate, the author may set a shorter review date.
- 9.2. Revisions can be made ahead of the review date when the procedural document requires updating. Where the revisions are significant and the overall policy is changed, the author should ensure the revised document is taken through the standard consultation, approval and dissemination processes.
- 9.3. Where the revisions are minor, e.g. amended job titles or changes in the organisational structure, approval can be sought from the Executive Director

responsible for signatory approval, and can be re-published accordingly without having gone through the full consultation and ratification process.

- 9.4. Any revision activity is to be recorded in the Version Control Table as part of the document control process.

## **10. Equality and Diversity**

- 10.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Inclusion & Human Rights Policy' or the Equality and Diversity website.

- 10.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

## Appendix 1. Governance Information

Information Category	Detailed Information
<b>Document Title:</b>	Emergency Blood Management Plan V2.0
<b>This document replaces (exact title of previous version):</b>	Emergency Blood Management Plan V1.0
<b>Date Issued/Approved:</b>	December 2021
<b>Date Valid From:</b>	January 2022
<b>Date Valid To:</b>	January 2025
<b>Directorate / Department responsible (author/owner):</b>	Ian Sullivan, Blood Bank Manager
<b>Contact details:</b>	01872 252500
<b>Brief summary of contents:</b>	Trust wide plan to be implemented in times of local and national blood shortage
<b>Suggested Keywords:</b>	Transfusion, blood, emergency, red cell, platelet, plasma.
<b>Target Audience:</b>	RCHT: Yes CFT: No KCCG: No
<b>Executive Director responsible for Policy:</b>	Medical Director
<b>Approval route for consultation and ratification:</b>	Hospital Transfusion Team, Hospital Transfusion Committee
<b>General Manager confirming approval processes:</b>	Richard Andrzejuk
<b>Name of Governance Lead confirming approval by specialty and care group management meetings:</b>	Kevin Wright
<b>Links to key external standards:</b>	EU Directive Blood Safety and Quality Regulations 2005 Emergency Planning Working Group of the National Blood Transfusion Committee

Information Category	Detailed Information
<b>Related Documents:</b>	<p>Blood Transfusion Policy</p> <p><b>References:</b></p> <p>National Blood Transfusion Committee A Plan for NHS Blood and Transplant and Hospitals to Address Red Cell Shortages Updated Version March 2020.  <a href="https://www.transfusionguidelines.org/uktransfusion-committees/national-blood-transfusion-committee/responses-andrecommendations">https://www.transfusionguidelines.org/uktransfusion-committees/national-blood-transfusion-committee/responses-andrecommendations</a></p> <p>National Blood Transfusion Committee: A Plan for NHS Blood and Transplant and Hospitals to address Platelet Shortages Updated Version November 2020.  <a href="https://www.transfusionguidelines.org/uktransfusion-committees/national-blood-transfusion-committee/responses-andrecommendations">https://www.transfusionguidelines.org/uktransfusion-committee/responses-andrecommendations</a></p> <p><i>HSC 2007/001: 'Better Blood Transfusion' safe and appropriate use of blood:</i>  <a href="https://www.transfusionguidelines.org/document-library/documents/hsc-2007-001-better-blood-transfusion-safe-and-appropriate-use-of-blood">https://www.transfusionguidelines.org/document-library/documents/hsc-2007-001-better-blood-transfusion-safe-and-appropriate-use-of-blood</a></p>
<b>Training Need Identified?</b>	Yes – training to be given to the Transfusion Management Group
<b>Publication Location (refer to Policy on Policies – Approvals and Ratification):</b>	Internet & Intranet
<b>Document Library Folder/Sub Folder:</b>	Clinical / Haematology

#### Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
June 2019	V1.0	Initial Issue	Nicki Jannaway, Lead Transfusion Practitioner
December 2021	V2.0	Complete re-write, inclusion of additional information, clarification of roles, updated processes following National updates	Ian Sullivan, Blood Bank Manager

**All or part of this document can be released under the Freedom of Information Act  
2000**

**This document is to be retained for 10 years from the date of expiry.**

**This document is only valid on the day of printing**

### **Controlled Document**

This document has been created following the Royal Cornwall Hospitals NHS Trust Policy for the Development and Management of Knowledge, Procedural and Web Documents (The Policy on Policies). It should not be altered in any way without the express permission of the author or their Line Manager.

## Appendix 2. Equality Impact Assessment

### Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity & Inclusion Team [richt.inclusion@nhs.net](mailto:richt.inclusion@nhs.net)

Information Category	Detailed Information
<b>Name of the strategy / policy / proposal / service function to be assessed:</b>	Emergency Blood Management Plan V2.0
<b>Directorate and service area:</b>	Haematology
<b>Is this a new or existing Policy?</b>	Existing
<b>Name of individual completing EIA</b> (Should be completed by an individual with a good understanding of the Service/Policy):	Ian Sullivan, Blood Bank Manager
<b>Contact details:</b>	01872 252500

Information Category	Detailed Information
<b>1. Policy Aim - Who is the Policy aimed at?</b> (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	To ensure that blood stocks are managed in line with the recommendations by the National Transfusion Committee during times of blood stock shortage, and transfusion is directed at appropriate transfusion categories. This policy is in place to give clear guidance for the Trust based on recommendations by the National Transfusion Committee.
<b>2. Policy Objectives</b>	To ensure patients are transfused appropriately during times of blood stock shortage
<b>3. Policy Intended Outcomes</b>	That patients with a life-threatening need for transfusion get the blood they require in times of blood shortage
<b>4. How will you measure each outcome?</b>	All patients will be assessed as requests are received by the EBMG during the activation of the EMBP
<b>5. Who is intended to benefit from the policy?</b>	Patients having a life-threatening bleed, staff of the Trust looking after patients who would have a transfusion under normal stock levels.

Information Category	Detailed Information
<b>6a. Who did you consult with?</b> (Please select Yes or No for each category)	<ul style="list-style-type: none"> <li>• Workforce: Yes</li> <li>• Patients/ visitors: No</li> <li>• Local groups/ system partners: No</li> <li>• External organisations: Yes</li> <li>• Other: No</li> </ul>
<b>6b. Please list the individuals/groups who have been consulted about this policy.</b>	<b>Please record specific names of individuals/ groups:</b> National Blood transfusion Committee Hospital Transfusion Team Emergency Planning Manager
<b>6c. What was the outcome of the consultation?</b>	Policy ratified
<b>6d. Have you used any of the following to assist your assessment?</b>	<b>National or local statistics, audits, activity reports, process maps, complaints, staff or patient surveys:</b>

**7. The Impact**  
 Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
<b>Age</b>	No	Categories of blood provision are related to severity of bleed and urgency of surgery.
<b>Sex</b> (male or female)	No	Categories of blood provision are related to severity of bleed and urgency of surgery.
<b>Gender reassignment</b> (Transgender, non-binary, gender fluid etc.)	No	Categories of blood provision are related to severity of bleed and urgency of surgery.
<b>Race</b>	No	Categories of blood provision are related to severity of bleed and urgency of surgery.
<b>Disability</b> (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	Categories of blood provision are related to severity of bleed and urgency of surgery.
<b>Religion or belief</b>	No	Categories of blood provision are related to severity of bleed and urgency of surgery.

Protected Characteristic	(Yes or No)	Rationale
<b>Marriage and civil partnership</b>	No	Categories of blood provision are related to severity of bleed and urgency of surgery.
<b>Pregnancy and maternity</b>	No	Categories of blood provision are related to severity of bleed and urgency of surgery.
<b>Sexual orientation</b> (e.g. gay, straight, bisexual, lesbian etc.)	No	Categories of blood provision are related to severity of bleed and urgency of surgery.

**A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.**

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Ian Sullivan, Blood Bank Manager

**If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:**  
[Section 2. Full Equality Analysis](#)

## Appendix 3. Action Card for Blood Bank Manager / Deputy

**Notified by:** National Blood and Transplant Service

**Responsible to:** Consultant responsible for transfusion

### **Purpose**

- To lead and co-ordinate the laboratory staff during the AMBER phase.
- To participate as a member the EBMG and the HTT in implementing the plan.

### **Action:**

- On receipt of NHSBT notification fax for Amber Alert - immediately inform and copy the correspondence to: (and again when recovering between phases)
  - The Haematology Consultant (or deputy) responsible for transfusion.
  - The Medical Director.
  - The Chief Executive/ Chief Operating Officer.
  - Transfusion Practitioners.
- Inform all additional members of the EBMG and HTT and secretarial staff.
- Inform all laboratory and blood bank staff.
- Attend an HTT meeting in the Incident room.
- Arrange for bloodstocks to be reduced to 67% or as required either by usage or by returning some stock.
- Reduce blood reservation to 12 hours wherever possible.
- Review compliance of the implementations and audit blood use
- Ensure that blood is available for clinically 'essential' transfusions.
- Cross Match only 1 unit at a time (other than for massive blood loss)
- Issue further units only when need is clearly identified and documented.
- Liaise with NHSBT and local hospitals to determine if the transfer of any stocks is required to make the most effective use of the available pool.

## Appendix 4. Action Card for Consultant Haematologist

**Notified by:** Blood Bank Manager

### **Purpose**

- To authorise the implementation of the Amber and Red phases of the EBMP.
- To lead medical response to the Amber and Red phases.
- Responsible for prioritising the use of blood for transfusion.

### **Action:**

- To inform all members of the Amber and Red team that the Amber or Red phase has been implemented so they will cascade this message to all staff.
- Attend immediate meeting of the HTT or EBMG and arrange for further meetings to review as required.
- Participate as a member of the HTT and the EBMG to review compliance of the implementations and carefully audit all blood use to ensure only clinically essential transfusions take place.
- Be available to Medical staff across the Trust for advice and discussion when transfusion outside of recognised indications is required.
- Authorise the change of the Amber phase down to Green or up to Red as notified and inform all senior medical staff and directorate managers.

## Appendix 5. Action Card for all Trust Doctors

**Notified by:** Transfusion Haematology Consultant via Care Group Directors

**Responsible to:** Medical Director

**Location:** Trust wide

### **Purpose**

- To reduce blood use in the Trust by up to 33% (amber) or 60% (red).
- To ensure that all blood requested for transfusion is essential and clinically indicated.
- To promote, encourage and adopt alternatives to transfusion wherever possible.

### **Action:**

- In addition to the usual requesting criteria, all requests for blood must be accompanied by a pre transfusion/pre-operative haemoglobin and detailed and legible clinical indications for transfusion.
- Ensure that surgery does not go ahead without appropriate blood being identified.
- Apply guidelines on blood product use and reduce transfusion triggers where possible.
- Refer to consultant haematologist when transfusion outside of recognised indications is required.

## Appendix 6. National Blood Transfusion Indication Codes (2020)

### RED CELLS

These are taken from UK national guidelines for the use of blood components. Although it is accepted that clinical judgement plays an essential part in the decision to transfuse red cells, the purpose of transfusion guidelines is to help clinicians decide when blood transfusion is appropriate, and to minimise unnecessary exposure to transfusion.

It is assumed that many patients undergoing elective surgical operations should not require transfusion support if their Hb concentration is normal before surgery.

Assuming normovolaemia has been maintained, the Hb can be used to guide the use of red cell transfusion.

Measures to avoid the use of blood transfusion including the use of alternatives to blood should be considered as part of *Better Blood Transfusion* even when blood stocks are normal. Non-surgical management of bleeding e.g. arterial embolisation, stenting or coiling of aneurysms might be more readily considered as treatment options during blood shortages.

Overdependence on group O RhD negative red cells will have a negative impact on the management of this scarce resource. Blood services worldwide encounter recurrent shortfalls of O RhD negative red cells. It is accepted that certain groups of patients benefit more than others from the use of this universal product. It is important that patients are prioritised with respects to their transfusion needs in order to identify those where the use of O RhD negative cells is essential. Group O RhD positive red cells may be used for males and women of non-child bearing age in who no anti-D is detectable. Hospitals are directed to the NBTC guidelines for the appropriate use of group O RhD negative red cells.

Each indication has been assigned a number, which may be used by clinicians when requesting blood or for purposes of audit. Specific details regarding the patient's diagnosis and any relevant procedures to be undertaken must also be provided.

#### **R1 Acute bleeding**

Acute blood loss with haemodynamic instability. After normovolaemia has been achieved/maintained, frequent measurement of Hb (including by near patient testing) should be used to guide the use of red cell transfusion – see suggested thresholds below.

#### **R2 Hb ≤ 70g/L stable patient**

Acute anaemia. Consider a Hb threshold of 70g/l and a target Hb of 70-90g/l to guide red cell transfusion. There are different recommendations (based on weak evidence) from other organisations e.g. Association of Anaesthetists.

#### **R3 Hb ≤ 80g/L stable patient and acute coronary syndrome**

Use an Hb threshold of 80g/l and a target Hb of 80-100g/l.

#### **R4 Chronic transfusion-dependent anaemia**

Transfuse to maintain an Hb which prevents symptoms. Suggest an Hb threshold of 80g/l initially and adjust as required. Haemoglobinopathy patients require individualised Hb thresholds depending on age and diagnosis.

## **R5 Radiotherapy - maintain Hb > 100g/L**

There is some evidence for maintaining an Hb of 100g/l in patients receiving radiotherapy for cervical and possibly other tumours.

## **R6 Exchange transfusion**

### **PLATELETS**

Dose – for prophylaxis, do not routinely transfuse more than 1 adult therapeutic dose. Prior to invasive procedure or to treat bleeding, consider the size of the patient, previous increments and the target count.

#### *Prophylactic platelet transfusion*

#### **P1 Plt <10 x 10<sup>9</sup>/L in reversible bone marrow failure**

Not indicated in chronic bone marrow failure if not on intensive treatment, and not bleeding.

#### **P2 Plt 10-20 x 10<sup>9</sup>/L with sepsis / haemostatic abnormality, or other additional risk factor for bleeding**

#### *Prior to invasive procedure or surgery*

#### **P3 To prevent bleeding associated with invasive procedures**

To raise the platelet count above the following thresholds for these procedures:

- **P3a Plt >20 x 10<sup>9</sup>/L - central venous line**
- **P3b Plt >40x10<sup>9</sup>/L - lumbar puncture/spinal anaesthesia**
- **P3c Plt >50x10<sup>9</sup>/L - pre-percutaneous liver biopsy / major surgery**
- **P3d Plt >80x10<sup>9</sup>/L - epidural anaesthesia**
- **P3e Plt >100x10<sup>9</sup>/L - critical site surgery e.g. CNS / eye**

Transfusion prior to bone marrow biopsy is not required.

#### *Therapeutic use to treat bleeding (WHO bleeding grade 2 or above)*

#### **P4a Major haemorrhage – Plt <50 x 10<sup>9</sup>/L**

#### **P4b Empirically in a Major Haemorrhage Pack / Protocol**

#### **P4c Critical site bleeding e.g. CNS - Plt < 100 x 10<sup>9</sup>/L**

#### **P4d Clinically significant bleeding - Plt < 30 x 10<sup>9</sup>/L**

#### *Specific clinical conditions*

#### **P5a DIC pre-procedure or if bleeding**

#### **P5b Immune thrombocytopenia (emergency treatment pre-procedure / severe bleeding)**

#### **P6. Platelet dysfunction**

#### **P6a Consider if critical bleeding on anti-platelet medication**

#### **P6b Inherited platelet disorders directed by specialist in haemostasis**

### **PLASMA**

Fresh frozen plasma Dose – 15-20 ml/kg body weight, often equivalent to 4 units in adults.

**F1 Major haemorrhage**

In the trauma setting transfuse empirically in a 1:1 ratio with red cells. Other settings give FFP in at least a 1 unit:2 unit ratio with red cells until results from coagulation monitoring are available. Once bleeding is controlled, further FFP should be guided by abnormalities in PT and APTT (keep PT/APTT ratio of  $<1.5\times$  mean normal), or by the use of viscoelastic haemostatic assays in a near-patient setting.

**F2 PT Ratio / INR  $> 1.5$  with bleeding**

Clinically significant bleeding without major haemorrhage. FFP required if coagulopathy. Aim for a PT and APTT ratio of  $< 1.5$ , or local protocol range for near-patient viscoelastic assays.

**F3 PT Ratio / INR  $>1.5$  and pre-procedure**

Prophylactic use when coagulation results are abnormal e.g. disseminated intravascular coagulation and invasive procedure is planned.

**F4 Liver disease with PT Ratio/INR  $> 2$  and pre-procedure**

FFP not usually required before invasive procedure if PT ratio/INR is

**F5 TTP / plasma exchange**

**F6 Replacement of single coagulation factor**