Emergency Blood Management Arrangements

(EBMA)

2017
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1. Introduction

The development of a contingency plan to ensure the effective use of available blood when national blood stocks have fallen to very low levels is critical to ensuring support for essential transfusions based on greatest clinical need.

The following constitutes a plan for the management and control of blood shortages in NHS Lanarkshire. The plan is based on the guidance in NHS HDL (2005) 25 and will be co-ordinated by the NHS Lanarkshire Emergency Blood Management Group (EBMG).

The guidance is structured to provide a framework of actions for the Scottish National Blood Transfusion Service (SNBTS) and hospitals in 3 phases:

- **Green** - “Normal” circumstances
- **Amber** - “Significantly reduced availability for a short or prolonged period”
- **Red** - “Severe prolonged shortage”

The plan deals only with a shortage of red cells. Further guidance will be developed by the Scottish Executive in relation to the impact of platelet stocks in severe shortages.

2. Aims of the EBMA

Implementing the Emergency Blood Management Arrangements (EBMA) will ensure prompt reaction to a national blood shortage. The main aims are to ensure:

- Blood is available for all essential transfusions to patients equally across Scotland
- A reduction in hospital stock level to ensure more of the national “pool” is available for essential transfusions
- Overall blood usage is reduced to ensure that those patients with the greatest clinical need are treated.
3. Plan Administration

This document is available on the Blood Transfusion webpage on ‘FirstPort’. An operational plan should also be available for each division detailing specific actions required to allow implementation of the EBMA plan within that division. Laboratory staff should also refer to the “Policy for Emergency Blood Management Arrangements within the Transfusion Laboratory”.

The EBMA plan forms part of the overall Emergency Planning, Major Incident and Business continuity arrangements within NHS Lanarkshire. It will be cross-referenced or incorporated within other plans as appropriate e.g. within ‘flu planning documentation’ in the event of a pandemic flu outbreak.

A summary of the main clinical implications of the plan is included in Appendix 6.

4. The Emergency Blood Management Group (EBMG)

The EBMG is responsible for -:

- Reviewing, updating and amending the EBMA biannually and following any blood shortage incident
- Considering the impact on the arrangements of new guidance, procedures and recommended changes as a consequence of national guidance, incident reports or judicial enquiries
- Activating the plan in times of blood shortage and ensuring the hospital meets the required reduction in blood usage
- Ensuring 24/7 availability of themselves or a deputy
- Ensuring that appropriate arrangements are in place to implement the EBMA e.g. ensuring MSBOS and Divisional Operational Plans are in place
# NHSL Emergency Blood Management Arrangements

## Table 1: Membership of the EBMG

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<th>ROLE</th>
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<tr>
<td>Chair of EBMG</td>
<td>Jane Burns (Divisional Medical Director)</td>
<td>Ans Khan (Associate Medical Director)</td>
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<tr>
<td>Consultant Physician</td>
<td>Andrew Russell</td>
<td>Stewart Campbell</td>
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<td>Surindra Maharaj</td>
<td>Dina McLellan</td>
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<td>Consultant Haematologist/ HTC chair</td>
<td>Andrew Fyfe</td>
<td>Jane Clarke</td>
</tr>
<tr>
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<td>Irene Barkby</td>
<td>Susan Friel</td>
</tr>
<tr>
<td>Transfusion Laboratory Manager</td>
<td>Kirsty Taggart</td>
<td>Betty Kyle</td>
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<tr>
<td>Transfusion Practitioner</td>
<td>Pauline Stewart</td>
<td>Heather Daniels</td>
</tr>
<tr>
<td>Service Manager</td>
<td>Lyn Clyde</td>
<td>Pauline Warnock</td>
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<td>Capacity Planning Manager</td>
<td>Karen Aitchison</td>
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<td>Communications Team</td>
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<td>Craig McKay</td>
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<tr>
<td>Clinical Risk</td>
<td>Carol McGhee</td>
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5. EBMA Plan Overview

The following paragraphs discuss the actions required in the Green, Amber and Red phases which are summarised in Appendix 1. The critical difference between Amber and Red is the clinical prioritisation of patients. In order to simplify the management of this process national guidance has been provided which suggests dividing patients into three broad categories which are outlined in Appendix 2. All transfusion requests during Amber and Red phases will require approval by the Consultant clinician responsible for the patient’s care.

A tabletop exercise of NHSL’s EBMA held in February 2009 demonstrated that reductions in surgical blood use will have very little impact and that it will require the cooperation of all clinical teams to work together to minimise blood usage and ensure that limited resources are reserved for those with the greatest clinical need.

5.1 GREEN PHASE

The Green phase applies to ‘normal’ circumstances when blood supply meets demand. Hospital actions in this phase relate to the successful implementation of the Better Blood Transfusion Programme (BBTP) which is coordinated by the Hospital Transfusion Committees (HTC). The key principle in this phase is that blood shortage can, in most cases, be avoided by reducing current usage of blood.

SNBTS continually monitors blood stocks and takes appropriate action to maintain these. If blood stocks fall, SNBTS will take action to increase collections from donors. If these actions prove unsuccessful, SNBTS will declare a blood shortage and communicate a move to the Amber or Red phase.
5.2 Amber Phase

5.2.1 If a significant shortage occurs, SNBTS will communicate the need to reduce stocks and usage to approximately 67% of normal levels. Appendix 3 details the weekly blood stock levels predicted by SNBTS for the three hospitals in NHSL in 2009.

5.2.2 The EBMG will be responsible for implementing and coordinating the actions listed in Appendix 1 and for ensuring that decisions are communicated to all appropriate staff within NHSL. Patients will be prioritised in accordance with national guidance as detailed in Appendix 2. Of note, decisions may impact on both clinical management and waiting times.

5.2.3 Elective surgery for which blood is likely to be required either peri- or post-operatively will be cancelled. This will be determined according to the MSBOS and audits of post-operative blood use. This decision will take into account the planned activity for the next 7 day period. Of note, in some circumstances restrictions may only apply to particular blood groups and planned procedures for patients of other blood groups may be able to proceed.

5.2.4 Transfusion triggers for blood use will be reduced and all requests where Hb >8g/dl will be referred to a Consultant Haematologist for review (Hb >7g/dl for obstetric cases).

5.2.5 Consider using cell salvage for appropriate surgical procedures.

5.2.6 If stocks of blood return to a sustainable level, SNBTS will communicate via the laboratories and the Consultant Haematologist that the Amber level shortage no longer applies and that orders can return to normal. It will be important to ensure that a sudden surge of demand on the transfusion services does not ensue at this time which may precipitate a recurrence of shortages.

5.3 RED PHASE

5.3.1 SNBTS will declare a red level shortage if there is a severe, prolonged shortage of blood, e.g. a 50% loss of donors, or, if an imminent severe threat to blood supply is identified.
5.3.2 Hospitals will be required to reduce blood stockholding and usage to approximately 40% of normal levels during this phase (see Appendix 3).

5.3.3 All transfusion requests will be vetted by a Consultant Haematologist and it is likely that only patients in category 1 will be transfused during this phase (see Appendix 2).

5.3.4 Consider using cell salvage for appropriate surgical procedures.

5.3.5 The EBMG will be responsible for implementing and coordinating this and ensuring decisions are communicated to all appropriate staff within NHSL.

5.3.6 If stocks of blood return to a sustainable level, this will be communicated as described in section

6. Initiation of the EBMA Plan

6.1 ACTIVATION OF EBMA BY SNBTS

The SNBTS will telephone each of the three transfusion laboratories in Lanarkshire to inform them that the national blood stocks have reduced to the level where hospitals should implement their Amber or Red status contingency arrangements. The SNBTS will also e-mail each of the transfusion laboratory managers with this information. The information from SNBTS will include the nature of the shortage and any actions which need to be taken by NHS Lanarkshire as part of the EBMA.

The transfusion laboratory manager or deputy will immediately contact the Consultant Haematologist with responsibility for transfusion by telephone. If this situation arises out of hours, or if neither of the designated Consultant Haematologists are available, then this role will be fulfilled by the on call Haematologist.
6.2 ACTIVATION OF HOSPITAL ARRANGEMENTS (SEE APPENDIX 4)

The Consultant Haematologist will authorise the activation of NHS Lanarkshire’s Amber or Red EBMA and initiate the communication cascade by contacting the Senior Manager on call at Monklands Hospital who will in turn contact the Senior Managers on call at Hairmyres and Wishaw Hospitals. The senior manager on each site will then be responsible for informing the on-call Consultant for each speciality, service managers, hospital cover/night manager and the bed manager as detailed in Appendix 4. Each division should have an operational plan detailing how this information will then be disseminated. The process is the same for both Amber and Red phases and will operate in and out of regular hours.

The Consultant Haematologist will also inform the Chair of the EBMG who will contact all members of the group regarding the shortage status and arrange for the group to meet via teleconference within 24 hours of an amber or red phase being declared. The group will continue to communicate daily until the shortage is over. In the event of circumstances which have a wider impact on the medical service than just transfusion, the group may link in with other planning meetings as appropriate.

The Chair of the EBMG will send an ‘all users’ email to all staff in NHSL as detailed in Appendix 5. They will also inform the IT department to activate a desktop alert and message on FirstPort, informing staff that the plans are being implemented.

7. Roles and Responsibilities of Personnel

7.1. SNBTS

- Provision of relevant and timely information of shortage status to blood banks via both telephone and e-mail.
- Daily update of available blood stocks.
7.2 BLOOD BANK

- Review all requests and prioritise the issue of blood taking into consideration:
  - The MSBOS
  - Patient category (appendix 2)
  - Blood group of the patient and availability of compatible blood
  - Need for additional platelet and plasma support.
  - Encourage limiting transfusions to 1 unit if clinically appropriate.
  - Ensure that the following guidance is complied with -:
  - Amber phase: all requests where Hb >8g/dl require discussion between the Consultant responsible for the patient and a Consultant Haematologist (Hb >7g/dl for obstetric cases).
  - Red phase: all requests require discussion between the Consultant responsible for the patient and a Consultant Haematologist
  - Inform the Consultant Haematologist of all cases of major haemorrhage as soon as declared.
  - Advise the requesting clinician if blood cannot be made available for their request due to restrictions. In the event of difficulties in the decision making process, the Consultant Haematologist will be available for discussion and, if agreement cannot be reached, the Chair of the EBMG will be the final arbiter.
  - Reduce the reservation period for blood.
  - Produce, maintain and control a current log of bloodstocks, detailing group and age of units. Provide this information to the EBMG. SNBTS will have direct access to bloodstocks within NHSL when the LIMS system is in operation.
  - Transfer stock between the 3 Lanarkshire laboratories if appropriate to optimise use of blood and blood components.
  - If the plan requires to be implemented out of regular hours, the on call laboratory staff will be contacted by SNBTS and will be responsible for ensuring the Consultant Haematologist is informed that the plan requires to be implemented.
NHSL Emergency Blood Management Arrangements

7.3. LAB MANAGER

- Inform Consultant Haematologist of shortage status.
- Ensure adequate staffing levels within blood bank. This may necessitate calling in additional staff.
- Assist with tasks described for Blood Bank staff.

7.4. CONSULTANT HAEMATOLOGIST

- Inform the senior manager on call at Monklands Hospital that EBMA are to be implemented who will, in turn, contact the Senior Managers on call at Hairmyres and Wishaw Hospitals.
- Inform the Chair of the EBMG of shortage status.
- Amber phase: review and discuss all transfusion requests where Hb >8g/dl (Hb >7g/dl for obstetric cases) with the Consultant responsible for the patient. Review other cases as required at the request of the laboratory staff and/or Consultant responsible for the patient. In the event of difficulties in reaching a decision, the Chair of the EBMG will be the final arbiter.
- Red phase: review and restrict all transfusion requests in discussion with the Consultant responsible for the patient.
- Encourage limiting transfusions to 1 unit if clinically appropriate.

7.5. CHAIR OF THE EBMG

- Inform members of the EBMG of the shortage status.
- Send pre-determined e-mail informing all clinical staff of the blood shortage status (Appendix 5).
- Inform the IT department and ask them to initiate a desktop alert and message for FirstPort.
- Contact the Communications department.
- Chair the EBMG.
- Monitor the integrity of the EBMA.
- Act as an advisor in the formulation and maintenance of the EBMA.
• Making final decisions where areas of conflict exist. This role can be performed by all
  Associate Medical Directors and by the Medical Director and requires cover both in and out
  of regular hours.
• Review impact of shortages.
• Collate lessons learnt.
• Organise and chair a debrief following the resolution of the shortage
• Produce final report following recovery to normal service.

7.6. EBMG MEMBERS

• The EBMG will communicate daily and will meet via teleconference within 24 hours of an
  Amber or Red phase being declared.
• In the event of circumstances which have a wider impact on the medical service than just
  transfusion, the group may link in with other planning meetings as appropriate.
• The group will be responsible for communicating actions and decisions to all appropriate staff
  within NHSL.
• They will continually review planned and actual blood usage and will liaise daily with SNBTS
  via the Consultant Haematologist.
• Assist the Chair of the EBMG with duties described above.

7.7. ALL CONSULTANTS

• Implement hospital transfusion guidelines, develop strategies to reduce use of allogeneic
  blood and audit their transfusion practice during Green phase.
• Ensure all transfusion request forms include clear clinical details and the reason for
  transfusion.
• Ensure that they, and all members of their team, have undergone transfusion training. This
  requires to be updated every 2 years.
• Amber phase: approve all transfusion requests for their patients and discuss all requests
  where Hb >8g/dL with a Consultant Haematologist.
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- Red phase: discuss all transfusion requests for their patients with a Consultant Haematologist.
- Encourage limiting transfusions to 1 unit if clinically appropriate.
- Review and restrict blood requirements as per local protocols, MSBOS and EBMA criteria.
- Review theatre lists and admissions to ensure patients in Category 3 are deferred.
- Feedback regarding the clinical impact of restrictions to EBMG via clinical representatives.

7.8. CAPACITY PLANNING MANAGER

- Liaise with Consultants/Divisional operations staff to review elective admissions based on clinical priorities and potential blood requirements.
- Collate theatre lists for the next 7 days and submit to the EBMG.
- Review waiting lists and attempt to schedule patients requiring non-transfusion dependent procedures.

7.9. CLINICAL GOVERNANCE / RISK ASSESSMENT

- Risk assessment of Amber and Red phases of EMBA.

8. Communication

The EBMG will keep the public and staff fully informed of the emergency plans put into place to manage an Amber or Red phase blood shortage. General communications with the public will be done in conjunction with SNBTS. Clinical staff will be responsible for communication to individual patients and their families whose care may be affected by these emergency measures.

At the first meeting of the EBMG arrangements for dealing with the public, media and keeping staff informed will be discussed and agreed. Communications will be via the chair of the Group who will liaise with the NHS Board Head of Communications.
9. Conclusion of the Blood Shortage

Once blood stocks return to a sustainable level, SNBTS will communicate via the blood banks and the Consultant Haematologist that the Amber or Red level shortages no longer apply and that orders can return to normal. It will be important to ensure that a sudden surge of demand on the transfusion services does not ensue at this time which may precipitate a recurrence of shortages.

After the blood shortage has been concluded and the group have been advised by SNBTS that blood stocks have returned to a sustainable level, a final meeting of the EBMG will be held with the following objectives:

- to review the experience of all participants involved in the management of the blood shortage
- to identify any problems/issues that were encountered
- to review the EBMA in accordance with above
- to produce a final report of the management of the blood shortage and the impact on clinical care and clinical activity.

The report will be approved by the Chair of the Group and sent to:

- Chief Executive
- Chair of the NHS Lanarkshire Board
- NHS Lanarkshire Chief Operations Officer
- NHSL Emergency Planning Coordination Group
- Chair of the Lanarkshire Hospital Transfusion Committee
- The Business Continuity Group
10. Appendices

APPENDIX 1: SUMMARY OF ACTIONS DURING EBMA PHASES

**GREEN**

- Implement strategies to reduce allogeneic blood use and minimise wastage
- Audit use of blood and blood products
  - audit surgical blood use and ensure MSBOS up to date
  - audit post-operative blood use
  - audit medical blood use
- Promote education and training of all clinical and laboratory staff and support workers involved in blood transfusion
- Ensure full clinical details and reason for transfusion are included on all transfusion request forms
- Maintain and update EBMA and ensure associated documents, such as the MSBOS and Divisional Operational Plans, are in place

**AMBER**

- Reduce usage and stockholding level to 67% of normal
- Elective surgery only when MSBOS indicates a Group & Save
- Reduce reservation period for blood post-operatively to 12 hours
- Reduce transfusion triggers
- All transfusion requests where Hb >8g/dl referred to Consultant Haematologist (Hb >7g/dl for obstetric cases)
- All cases of major haemorrhage to be discussed with Consultant Haematologist
- Movement of blood between NHSL blood banks as required
RED

• Reduce usage and stockholding to 40% of normal
• Only emergency surgery to continue (see Appendix 2)
• All transfusion requests to be reviewed by Consultant Haematologist
• Priority for blood based on clinical need
• Movement of blood between NHSL blood banks as required
APPENDIX 2: PATIENT TREATMENT CATEGORIES

The following patient categories are defined in line with the NHS HDL (2005) 25. The categories define patient groups according to the clinical need for transfusion and list transfusions and procedures that have been prioritised to continue during the Amber and Red phases.

<table>
<thead>
<tr>
<th>CATEGORY 1: Highest Priority</th>
<th>CATEGORY 2: Moderate Priority</th>
<th>CATEGORY 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>to be given priority for transfusion during Red phase</strong></td>
<td><strong>to be given priority for transfusion during Amber phase but NOT Red phase</strong></td>
<td>Elective surgery likely to require transfusion support will be cancelled during Amber and Red phases. Only elective procedures where MSBOS indicates a Group &amp; Save will proceed.</td>
</tr>
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**CATEGORY 1**: Highest Priority:
- Resuscitation of life-threatening/on-going blood loss including trauma

**Surgery/Obstetrics**
- Emergency surgery* including cardiac and vascular surgery**, and organ transplantation
- Cancer surgery (probably curative)

**Non-surgical anaemia’s**
- Life-threatening anaemia including patients requiring intra-uterine support and high dependency care/SCBU
- Stem cell transplantation or chemotherapy****

**CATEGORY 2**: Moderate Priority:

**Surgery/Obstetrics**
- Cancer surgery (palliative)
- Symptomatic but not life-threatening post-operative or post-partum anaemia
- Urgent*** (but not emergency) surgery

**Non-surgical anaemia’s**
- Symptomatic but not life-threatening anaemia
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| **• Severe bone marrow failure** |
| **• Thalassaemias (but consider lower threshold)** |
| **• Sickle cell disease crises affecting organs** |
| **• Sickle cell patients aged < 16 with past history of CVA** |

N.B. Restrictions may apply to only specific blood groups

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

** With the exception of poor risk ruptured 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
APPENDIX 3: BLOOD STOCK LEVELS

These figures represent an estimate of the stock levels of packed red cells for the 3 hospitals in NHSL during the green, amber and red phases of the EBMA.

<table>
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<th>HAIRMYRES</th>
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<th>B+</th>
<th>AB+</th>
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APPENDIX 4: FLOW CHART OF EBMA COMMUNICATION CASCADE

Senior manager on each site will inform the following staff:

- On Call Consultants for:
  - Surgery
  - Orthopaedics
  - Medicine
  - Anaesthetics
  - Obstetrics at Wishaw
  - Gynaecology at Wishaw
  - Urology at Monklands

Consultants will be responsible for disseminating information to clinical teams

- Service managers

- Hospital Cover/Night Manager who will advise all wards and HECT Team

- Bed Manager who will liaise with Capacity Planner
To all staff in NHS Lanarkshire

National blood stocks have fallen to very low levels and it is necessary to implement the Amber/Red phase of the Emergency Blood Management Arrangements (EBMA) with immediate effect.

Staff should refer to the NHS Lanarkshire EBMA policy via the blood transfusion webpage on ‘FirstPort’.

The Emergency Blood Management Group (EBMG) will oversee implementation of the arrangements but each individual must play their role in carrying out the plan and ensuring that blood supplies are maintained for the most essential transfusions.

Staff will be kept up to date with the situation and will be informed when the shortage is over.

Yours sincerely,

Dr Jane Burns

Divisional Medical Director

Chair of the EBMG
APPENDIX 6: SUMMARY OF EBMA

Emergency Blood Management Arrangements (EBMA)

- contingency plan to ensure effective use of blood in times of shortage
- aim to ensure that blood is used preferentially for those who need it most.

Emergency Blood Management Group (EBMG)

- multidisciplinary group chaired by Dr A Graham, Medical Director
- responsible for developing and coordinating implementation of the EBMA.

Three phases

- **Green Phase**: “normal circumstances”
- **Amber Phase**: significant shortage
- **Red Phase**: profound or prolonged shortage

The EBMA can be found on the Blood Transfusion webpage on FirstPort. The table summarises the roles of staff members during the phases of the EBMA.

<table>
<thead>
<tr>
<th>Blood Bank</th>
<th>Green Phase</th>
<th>Amber Phase</th>
<th>Red Phase</th>
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<tbody>
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<td>Ensure safe and appropriate use of blood</td>
<td>Review and maintain stock levels at 67%</td>
<td>Review and maintain stock levels at 40%</td>
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<tr>
<td>Ensure all staff trained in transfusion</td>
<td>Review and prioritise transfusion requests</td>
<td>Review and prioritise transfusion requests</td>
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<tr>
<td></td>
<td>De-reserve blood at 12h</td>
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<table>
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<th>Green Phase</th>
<th>Amber Phase</th>
<th>Red Phase</th>
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<tbody>
<tr>
<td>Review transfusion requests where Hb &gt;8 g/dl</td>
<td></td>
<td>Review all transfusion requests</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surgical Teams</th>
<th>Green Phase</th>
<th>Amber Phase</th>
<th>Red Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure safe and appropriate use of blood</td>
<td></td>
<td></td>
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<tr>
<td>Ensure all staff trained in transfusion</td>
<td></td>
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<tr>
<td>Cancel elective surgery where MSBOS indicates X-match</td>
<td></td>
<td>Restrict surgery to life threatening/emergency/curative cancer cases only</td>
<td></td>
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</tbody>
</table>

Dr J Burns & Dr A Fyfe on behalf of the EBMG, May 2017 Review date July 2020
## NHSL Emergency Blood Management Arrangements

<table>
<thead>
<tr>
<th>Medical Teams</th>
<th>Chair of EBMG</th>
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</thead>
<tbody>
<tr>
<td>• All transfusion requests to be approved by Consultant</td>
<td>• Send ‘all user’ email and arrange for alert on FirstPort</td>
</tr>
<tr>
<td>• Reduce transfusion triggers</td>
<td>• Arrange EBMG teleconference meeting within 24h</td>
</tr>
<tr>
<td>• Consultant to discuss all transfusion requests with Consultant Haematologist</td>
<td>• Make final decisions where conflicts exist</td>
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<td></td>
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</table>

- **Medical Teams**
  - All transfusion requests to be approved by Consultant
  - Reduce transfusion triggers
  - Consultant to discuss all transfusion requests with Consultant Haematologist
  - Reduce transfusion triggers

- **Chair of EBMG**
  - Send ‘all user’ email and arrange for alert on FirstPort
  - Arrange EBMG teleconference meeting within 24h
  - Make final decisions where conflicts exist
APPENDIX 7: GLOSSARY

**Emergency Blood Management Arrangements (EBMA)**

A contingency plan to ensure effective use of blood in times of shortage. The aim is to ensure that blood used preferentially for those who need it most.

**Emergency Blood Management Group (EBMG)**

A multidisciplinary group whose role is to develop the EBMA and coordinate implementation in times of shortage.

**FirstPort**

NHS Lanarkshire’s intranet, where the blood transfusion webpage can be accessed under ‘Clinical Services’.

**Hospital Transfusion Committee (HTC)**

A multidisciplinary group responsible for meeting the aims of the Better Blood Transfusion programme including implementing measures to reduce blood usage and wastage. Lanarkshire has a subcommittee on each of the 3 hospital sites which meet quarterly, as well as an overarching committee which meets every 6 months.

**Maximum Surgical Blood Ordering Schedule (MSBOS)**

A tariff indicating which surgical procedures require blood to be cross-matched pre-operatively and which can be managed by sending a Group & retain sample only. Adhering to the MSBOS reduces unnecessary blood holding for individual patients, minimises unnecessary lab work and reduces blood wastage.

**Scottish National Blood Transfusion Service (SNBTS)**

This service collects blood from donors and provides blood and blood products to hospitals throughout Scotland.

**Transfusion training**

It is mandatory for all staff involved in the blood transfusion process to undergo training every 2 years. This can take the form of ‘face to face’ training or can be done online at [www.learnbloodtransfusion.org.uk](http://www.learnbloodtransfusion.org.uk).