Major Haemorrhage

Massive Blood Loss

Definitions

- Loss of one blood volume within a 24 hour period
- 50% blood volume loss within 3 hours
- Rate of loss of 150mls/min
- Bleeding which leads to a heart rate more than 110 beats/min and / or systolic blood pressure less than 90 mmHg

Ref: A practical guideline for the haematological management of major haemorrhage (BCSH 2015)

Blood component administration alone will not stop blood loss from large wounds

The decision to activate the Major Haemorrhage Protocol is based on clinical judgement: a patient may have major bleeding requiring activation of the Major Haemorrhage Protocol without fulfilling the above criteria

Commonest Causes

- Gastrointestinal Haemorrhage
- Trauma
- Ruptured Aortic Aneurysm
- Major Obstetric Bleeds

Obstetric patients may not demonstrate clinical features of major bleeding until very late

Clinical Features

- Thirst
- Cool pale sweaty skin
- Tachycardia
- Decreased pulse rate
- Reduced BP
- Increased respiratory rate
- Restlessness/confusion
- Reduced urine output

Applies to Royal Infirmary of Edinburgh, Western General Hospital, St John's Hospital

Major Haemorrhage Protocol - LUHS

This Protocol **only** facilitates the rapid supply of blood components & rapid transport of blood samples.

Make an additional call if an emergency clinical team is required e.g. Cardiac Arrest/ Medical Emergency or Obstetric Emergency call.
One person should act as Team Leader during the Major Haemorrhage and should nominate a member of the team to communicate with Blood Bank.

To trigger the Major Haemorrhage Protocol (MHP)
Phone 2222 and state that there is a Major Haemorrhage & the patient location. Remain on the line while switchboard transfers your call to the Blood Bank.

Tell Blood Bank:

- Diagnosis e.g. ruptured aortic aneurysm, obstetric emergency
- Patient's details - name, DOB, CHI number (A&E or 700 number for unidentified patient)
- Blood components required e.g. red cells, FFP, platelets and how many units (clinical areas e.g. obstetrics, A&E may have their own local policies on recommended component requests during a Major Haemorrhage)
- How urgently the blood components are required (state explicit timescale)
- The patient's current location and planned moves
- Your name and contact details
- Samples to be sent to Blood Bank/Haematology and if they are ready for collection **by the Major Haemorrhage Porter** (Blood Bank will inform you whether a sample for blood grouping is required).

Send the following blood samples with the Major Haemorrhage Porter (NOT pod system):

- a sample for blood grouping to the Blood Bank (unless Blood Bank already have one)
- FBC and coagulation screen samples to Haematology

A dedicated Major Haemorrhage Porter will report to Blood Bank and will be contactable via Blood Bank to transport blood components or come and collect blood samples.
Emergency FBC and coagulation samples will receive priority handling by the Haematology Lab.

If further blood components are required contact Blood Bank directly on the numbers below.

Send further FBC and coagulation screen samples as indicated.

- For sample collection at RIE contact Haematology Lab using the Haematology number below.
- For sample collection at WGH/St John's contact Blood Bank on the numbers below.

When the Major Haemorrhage is over:
Inform Blood Bank directly.
Blood Bank will stand down the Major Haemorrhage Porter and inform the Haematology lab. It will still be possible to ask Blood Bank to issue further blood components if this is considered necessary.

Contact numbers for Blood Bank / Haematology Lab
RIE: Blood Bank - Phone 27501 or 27502. Haematology tests - Bleep (110) 6550
WGH: Phone 31912 or Bleep 8539 (emergency only)
St John's: Bleep 3729 (or Phone 2222 & ask switchboard to "Fast Bleep" 3729 – emergency only)

O negative blood is kept in Blood Bank at each hospital.
At RIE, there is also O neg. in the blood fridges in A&E (4 units) and Obstetric Theatres (2 units).
Inform Blood Bank immediately if these units are used so that they can be replaced.

If advice from a haematologist is required contact the on-call haematology doctor via switchboard.
Guidance on the management of Major Haemorrhage is on the Blood Transfusion pages on the Lothian intranet.

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Major Haemorrhage Protocol

Intranet: healthcare > clinical guidance

- Key points:
  - Lothianwide (except RHSC have own protocol)
  - 2222 > stay on line to be put through directly to transfusion lab > provide details and what you need (no ‘standard pack’)
  - Remember to send urgent transfusion sample if there is not one already in the lab
  - Designated porter will report to transfusion lab and will run between there and clinical area
  - Contact on-call haematologist via switchboard if advice required
  - The Major Haemorrhage Protocol is designed purely to get blood to the patient as soon as possible. If a Medical Emergency / Cardiac Arrest Team are required for the patient remember to also put out a 2222 Medical Emergency / Cardiac Arrest call

Management of Major Haemorrhage

- **Activate the Major Haemorrhage Protocol**

- A specific member of the team should be nominated to co-ordinate communication with the laboratory staff and others for the duration of the major haemorrhage

- Insert large bore IV cannula
  - obtain blood samples
  - ✓ FBC, Biochemistry, Blood gases
  - ✓ PT, APTT, Fibrinogen, Coag Screen
  - ✓ Pre-transfusion testing (G&S, X-Match)

- Infuse crystalloid rapidly - restore systolic BP

- Contact key personnel

- Arrest bleeding

Management of Major Haemorrhage (cont)

- Transfuse red cells to maintain adequate blood oxygen transport capacity (use **wide-bore** blood giving set)

- Anticipate the need for other blood components

- Treat underlying cause

- Manage other aspects of patient care
  - ✓ Oxygen transport capacity
  - ✓ Maintain temperature
  - ✓ Adequate pain relief

Frozen components will take 15-20 minutes to thaw and platelets may not be immediately available in some hospitals

Principles of Transfusion Management

Blood Loss	Fluid Management
20% Up to 1 litre (adult)	**Crystalloid**
>20% More than 1 litre	**RBCs + crystalloid and/or colloid**
1 Blood Volume or more	**RBCs + crystalloid and/or colloid ± blood components**

Ref: BCSH Guidelines for the Use of Platelet Transfusion (2003)