Swansea Bay University Health Board

Massive Haemorrhage Policy

Responsible Officer: Chair of SBUHB Transfusion Committee

Approved by: Executive Board

Issue Date: July 2011

Review Date: Ongoing

Contents

1. Policy Statement

1.1. Massive haemorrhage is a major cause of morbidity and mortality, with impaired oxygen delivery leading to widespread cellular dysfunction both in the early stages and later from multiple organ failure.

1.2. In the event of a suspected massive haemorrhage it is imperative that there is prompt and appropriate action taken, with good communication between the blood transfusion laboratory and the clinical team.

1.3. Successful transfusion support has currently relied heavily on blood results to guide therapy; however coagulopathies can develop rapidly in massive haemorrhage due to consumption, hyperfibrinolysis as well as dilution. There is some evidence that early transfusion of fresh frozen plasma (FFP) and platelets improves the patient's outcome.

2. Scope of the Policy

2.1. This policy applies to all staff and all patients of Swansea Bay University Health Board (SBUHB). There is a requirement on all relevant staff to comply with the provisions of this policy and where requested, to demonstrate such compliance.

3. Aims and Objectives

3.1. The aim of this policy is to define the responsibilities and roles of the clinical team and the transfusion department in the management of massive haemorrhage.

3.2. The objective of this policy is to detail the process for delivering the transfusion needs in these patients.

3.2.1. Recently, military trauma surgeons working in Iraq have analysed their clinical experience managing massive haemorrhage. They report that early replacement of clotting factors is critical in managing patients with massive hemorrhage, but is often delayed. This policy is based on their experience.

4. Definition s

4.1. Massive haemorrhage may be defined as the loss of one blood volume over a 24 hour period or in the acute situation, 50% blood volume loss in 3 hours or blood loss at a rate ≥ 150 ml per minute.

5. References

- BCSH Guidelines on the management of massive blood loss.
- OBG Management: Control of massive haemorrhage. Lessons from Iraq reach the US delivery suite.
- Nottingham University Hospitals NHS Trust Massive Trauma Policy

6. Organisation and Responsibilities

6.1. Following the assessment of a patient with suspected massive haemorrhage, the Clinical Team leader will declare a MASSIVE HAEMORRHAGE situation and they (or nominated team member) will contact switchboard, giving details of the CLINICAL AREA (e.g. Labour ward / A+E / Theatres etc.) and a contact name and phone number.

6.2. Switchboard is then responsible for sending out the massive haemorrhage alert, notifying the blood transfusion laboratory or on-call Biomedical Scientist (BMS), relevant senior medical staff, Consultant Haematologist on–call and Porters of the massive haemorrhage and will relay the contact name and contact number.

6.3. The BMS will contact the Clinical Team Leader on the given number, as a matter of urgency.

6.4. In instances of massive haemorrhage it may not always be possible to perform a thorough check of the patient's transfusion history (patient may be unknown or due to the urgency of request). However, if the patient is found to have previously identified antibodies, special interest flags or special requirements (CMV negative or Irradiated) the Haematology Consultant and Requesting Clinical Team must be consulted immediately.

6.5. The ultimate responsibility for use of any component lies with the Clinical team. The responsibility of the BMS is to ensure that clinicians have the relevant information on which to base clinical decisions.

7. Procedure

7.1. Clinical Responsibilities

- A nominated team member will ensure that the patient has a unique identifier, i.e. an emergency number if no hospital or NHS number is available.
- A nominated team member will ensure blood samples, with fully completed forms for FBC, group and save (G+S) and coagulation screen are taken, appropriately labelled and dispatched immediately to the laboratory.

- Even in urgent situations, compliance with the quality requirements for pre transfusion testing requires a minimum dataset of 6 points of identification, which must match **exactly** on the sample and the request form.
    - Unique identifier: **Hospital / ED / NHS number**
    - Last name:
    - First name:
    - Date of Birth: **Not age**
    - Address: **Minimum first line**
    - Requester ID (Signature of sample taker)

  Date and time of collection must also be noted.

- For unknown patient's these points of ID will be:
    - Unique identifier: **Hospital / ED number**
    - Last name: **UNKNOWN**
    - First name: eg **Male 1** / **Female 3**
    - DOB: indication of age – **child**, **young adult** , **elderly**
    - Address: the **time of admission**.
    - Requester ID (Signature of sample taker)

  Date and time of collection must also be noted.
- The named team member is responsible for speaking with the blood transfusion BMS directly, when they phone, to give patient name and ID if known, in order that the LIMS can be assessed for previous blood grouping information.
- A dedicated porter will be identified and sent to the blood transfusion laboratory to collect 4 units of red cells for immediate use. This will be either emergency O Rh (D) Negative 'Flying Squad' blood, or group specific units, if the patient's blood group is already available on the LIMS.

7.2. Responsibilities of the Blood Transfusion Staff:

- After having been made aware of the 'massive haemorrhage' situation by Switchboard, as a matter of urgency, the BMS will make contact with the named person in the clinical area.
- It must be assumed that the emergency O Rh (D) Negative units in the issue fridge have already been taken (unless otherwise specifically notified by the assessing clinician) and these units must be replaced as soon as possible.
- **Before** receipt of a cross-match, baseline FBC and coagulation blood samples**: Immediately** issue a further 4 units of O Rh (D) Negative blood {O Rh (D) positive units may be issued, if O Rh (D) negative units are in short supply, particularly if the patient is male or > 60 year female} **or** group specific units, if appropriate group information is available. Thaw 4 units of Fresh Frozen Plasma (FFP).

7.3. Subsequent action

- The porter will be sent to collect the 4 units of blood and 4 FFP and to deliver the baseline blood samples and group and cross-match request.

- On receipt of the urgent blood request, the blood transfusion BMS must check the sample and request form for acceptability and compliance with laboratory guidelines.

- If the request does not meet the quality requirements for sample acceptance, a repeat request must be arranged. Continue to issue Group O Rh D negative blood (or O Rh D positive in males or females >60yrs) until a viable sample is received.
- If bleeding continues issue a further 4 group specific units of blood, 4 FFP, I adult dose of platelets and 4 grams of fibrinogen concentrate (Riastap). The BMS will contact the Clinical Team Leader to discuss the need for these units to be packed in transit box/es.
- A repeat FBC and clotting screen should then be performed and further products administered as instructed by clinical lead / consultant haematologist.
- After the initial blood and FFP has been issued, if the patient's clinical condition necessitates, further units maybe issued, in boxes, as appropriate to minimise potential wastage.
- Each time the Massive Haemorrhage protocol is triggered it must be recorded on the Massive Haemorrhage record sheet by blood transfusion staff. The information will be reviewed at the HTC (as a standing agenda item) along with any meeting notes that may have occurred as a result of an incident investigation or debrief meeting (as appropriate).

Appendix 1

Clinical Area

Nine Steps for Successful Coordination in Massive Haemorrhage – (in adults)

1. Recognise trigger and activate pathway for management of massive haemorrhage; (assemble the emergency response team)
    a. Activate pathway if massive haemorrhage is expected and there is a reasonable expectation that a large quantity of blood products will be required. The most senior clinician present should make the decision.
    b. Ring switchboard and declare a massive haemorrhage-stating clinical area, contact name and contact number.
    c. Switchboard will contact:
        i. Blood bank
        ii. Porters
        iii. Appropriate specialist consultant(s) as requested
        iv. Consultant Haematologist

2. Send porter for 'Emergency blood' 4 units

3. Allocate team roles:
    a. Team leader
    b. Communication lead – dedicated person for communication with other teams, especially the transfusion lab and support services
    c. Sample taker/investigation organiser/documenter
    d. Transporter – porter or member of team from clinical area

4. Complete request forms / take blood samples – label samples correctly / recheck labelling before dispatch.
    a. FBC, crossmatch, clotting screen and fibrinogen
    b. U+E, ABG, calcium, lactate as required
    c. **REMEMBER** zero tolerance on sample labelling and minimum identifiers:
        i. **Unique identifier (eg hosp number), last name, first name, DOB, 1st line address, requester ID**
        ii. Unknown patients – unique bedside generated labels or unique identifier (eg **emergency hosp number**), last name – **unknown**, first name – **male 1, male 2, female 1 etc**, DOB – **approx age, child, young adult, elderly**, 1st line address – **time of admission**, requester ID

5. Communication lead to be contacted by BMS (notified by switchboard). BMS will phone and will be informed of:

    a. The patient's details
    b. Whether O neg has been used and how many units
    c. Order blood products required (see point 6)
    d. If blood has been transferred in with patient from another Trust/HB or patient is being transferred to another Trust/HB
    e. Lab BMS contact numbers are - Morriston 3054, Singleton 5075, POW 2585 / 2343. NPT 2367.

6. Request Blood products:

    a. If bleeding continues: O neg 4 units plus 4 units FFP when available
    b. If bleeding continues: inform lab and request 4 units group specific, 4 units FFP, 1 platelet pool and 4g fibrinogen concentrate
    c. Further products guided by clinical situation:
        i. Platelets < $80x10^9$/l – give 1 pool platelets (2 if < 30)
        ii. Fibrinogen < 2.0 g/l – give 4g fibrinogen
        iii. APTT/PT ratio > 1.5 x normal – 6 units (1.5 L) FFP

7. The clinical / laboratory interface

    a. Communication lead to arrange for transport of samples / request from to the lab
    b. BMS to ring communication lead with results of urgent investigations
    c. BMS to ring communication lead when blood / blood components are ready
    d. Communication lead to arrange to collect blood and blood components from the laboratory
    e. Porter contacts - Morriston - ext 3098 Bleep 3916, Singleton Ext 5372 Bleep 5643, POW Ext 2481 Cisco number 6270 (Shift leader) Bleep 270 Neath Port Talbot ext 7750 Bleep 2921

8. Communicate stand down of pathway

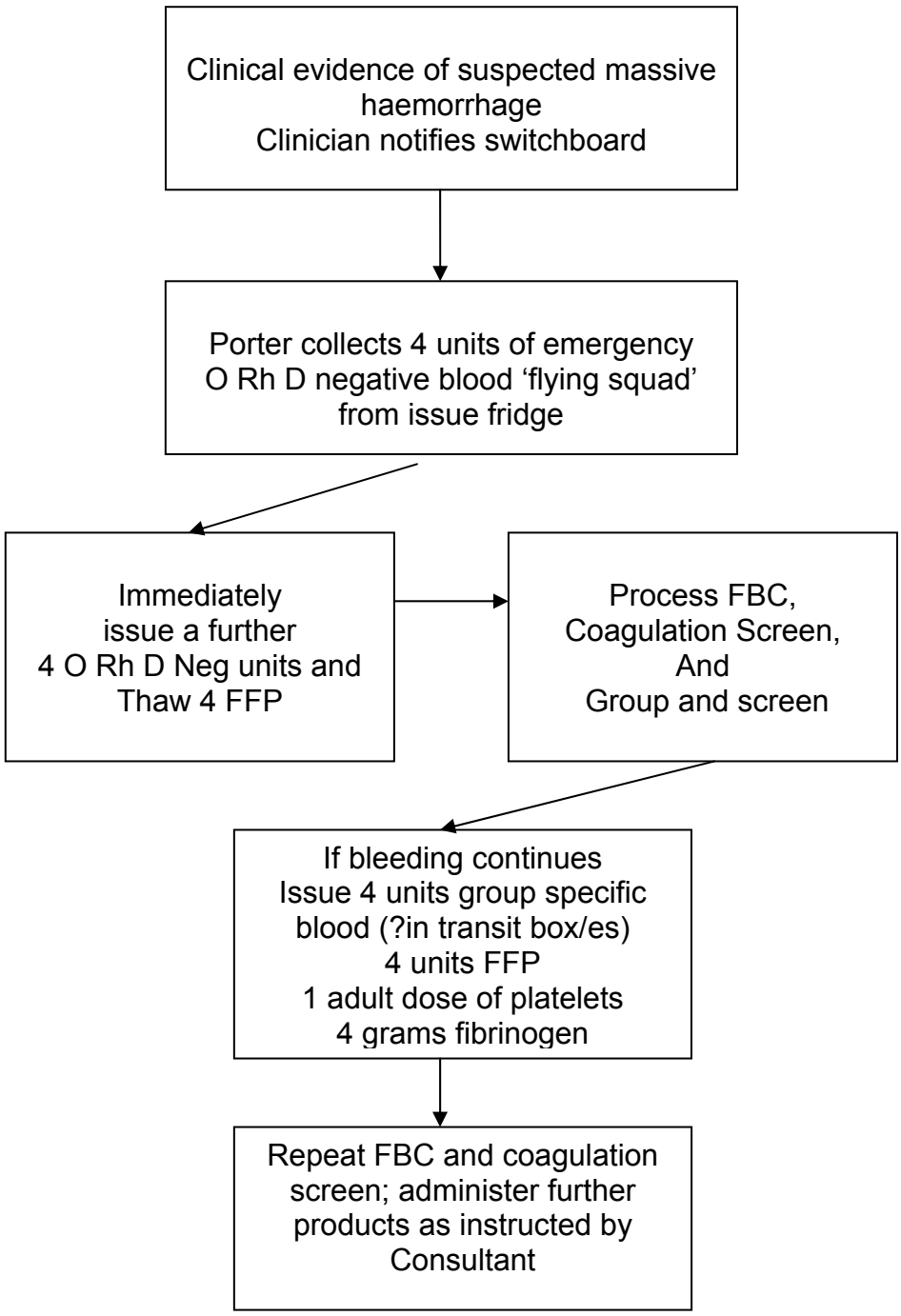
    a. Let BMS know which products have been used
    b. Return unused products

9. Ensure documentation is complete

    a. Clinical area: monitoring of vital signs, timings of blood samples and communications, transfusion documentation in patient record (including product stickers), return traceability labels to blood transfusion lab
    b. Laboratory: keep record of communications / telephone results in patient laboratory record

Flow chart 1

Massive Haemorrhage Protocol – Laboratory

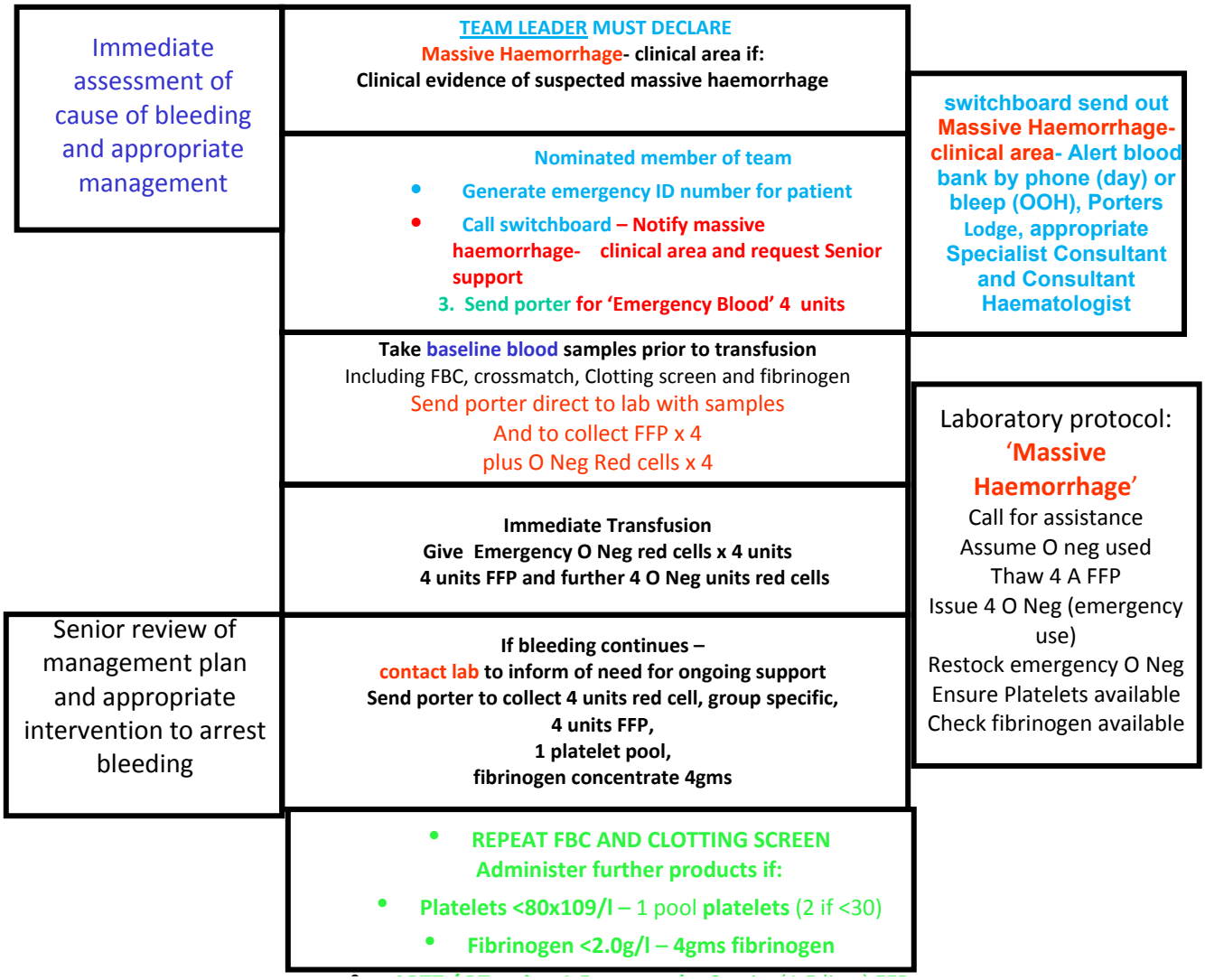


- Platelets < $80x10^9$/l - 1 pack platelets
- Platelets < $30x10^9$/l - 2 pack platelets
- Fibrinogen <2.0g/l – 4 grams

APTT / PT ratio > 1.5 x normal – 6 units (1.5litre) FFP

Flow chart 2

Massive Haemorrhage Protocol – Clinical Area



Appendix 2

MASSIVE HAEMORRHAGE TRIGGER (MHT) RECORD SHEET

DATE OF MHT	PATIENT DETAILS	OUTCOME	QUALITY INCIDENT
	Name: Dob: ID No.	Number of components transfused: RBCs FFP PLTS Fbg	Quality Incident form completed? Yes / No QI number:
	Name: Dob: ID No.	Number of components transfused: RBCs FFP PLTS Fbg	Quality Incident form completed? Yes / No QI number:
	Name: Dob: ID No.	Number of components transfused: RBCs FFP PLTS Fbg	Quality Incident form completed? Yes / No QI number:
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Authorisation Form for Publication onto COIN

COIN ID.	CID286
Title.	SBUHB Massive Haemorrhage Policy.
Name and Signature of Author/Chair of Group or Committee.	Haematology Department (Guardian of document on COIN)
Name and Signature of Lead Pharmacist.	N/A
Please specify whether the document is New, Revised or Supersedes a previous version.	V1 Remains active.
Please specify the section on COIN where you wish the document to be published.	Specialties – Trauma & Haematology.
Please sign to confirm that the document has been authorised by an approved governance process in a specialty or delivery unit.	Hospital Transfusion Committee Approved by the Executive Board
Is the document relevant to the GP Portal?	No
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Please specify keywords to assist with searching. (2)	Transfusion, Blood Loss, Bleed, Haemorrhage.
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(1) All policies need to comply with the Policy for the production, consultation, approval, publication and dissemination of strategies, policies, protocols, procedures and guidelines

(2) Relevant keywords will assist COIN users with searching for documents.