

## 3 URGENT AND EMERGENCY BLOOD TRANSFUSION REQUESTS

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3.5 KEMH Massive Transfusion Protocol  
Section 3  
Transfusion Medicine Protocols  
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### 3.5 KEMH MASSIVE TRANSFUSION PROTOCOL

The KEMH Massive Transfusion Protocol is for use in major haemorrhage in obstetric patients and was developed as an initiative of the KEMH Hospital transfusion Committee in conjunction with the KEMH Anaesthetics Department.

The summary chart is at the at the end of this document or the document may be opened by clicking on the following link

[KEMH Massive Transfusion Protocol](#)

#### PRINCIPLES OF CRITICAL BLEEDING IN OBSTETRICS

##### A. CRITERIA FOR IDENTIFYING PATIENTS EXPERIENCING SEVERE HAEMORRHAGE

Consider activating the Massive Transfusion Protocol (MTP) if the patient is still bleeding and any of the following criteria are met:

1. Patients with estimated blood loss of > 2500ml.
2. Patients who have received 4 units of red cells with more anticipated
3. Clinical or laboratory evidence of coagulopathy

##### B. EARLY INTERVENTIONS

1. Uterine massage and compression
2. Administration of uterotonic agents
3. Maintain blood pressure – good IV access, early administration of resuscitation fluid
4. Avoid hypothermia – Bair Hugger, fluid warmers
5. Send samples to laboratory – Group and screen, FBP, coagulation profile, D-Dimers, Ca<sup>++</sup>

##### C. ACTIVATION OF THE MASSIVE TRANSFUSION PROTOCOL (MTP)

1. Usually Consultant / senior anaesthetist in charge of the case, notifies Blood Bank directly once patient is identified to be at risk by fulfilling criteria A1 or A2
2. Blood component therapy, after the initial 4 units of packed cells, is then administered according to the MTP, provided the initial haematological and coagulation screens are within normal limits.
3. Haematological and coagulation monitoring is performed according to MTP protocol, and guides ongoing component therapy.

- Component therapy administration may be altered by the consultant in charge particularly in the event of abnormal initial haematological and coagulation values, clinical conditions (e.g. DIC, placental abruption, fetal death in utero, severe pre-eclampsia, clexane therapy) suggesting coagulopathic risk.
- The decision to cease the MTP is that of the Consultant in charge and must be communicated directly to blood bank.

#### D. PRINCIPLES OF COAGULOPATHY DURING PRBC TRANSFUSION

- Coagulation factors are often at inadequate levels in patients suffering non compressible or microvascular bleeds, despite normal APTT and PTT. These measurements are often underestimated in the presence of coexistent hypothermia. Once APTT, PT are abnormal, there is probably close to only 30 –40 % of coagulation factor present. It is therefore prudent to be aggressive with FFP early – rather than waiting for an abnormal result as a trigger to replace coagulation factors.
- The endpoint of the coagulation cascades is fibrinogen being converted to fibrin. Coagulopathy will not tend to correct, even with adequate factor replacement, unless fibrinogen is adequately present. Cryoprecipitate is the appropriate choice for hypofibrinogenaemia. Pregnant women have higher fibrinogen levels than non-pregnant women and should be considered severely hypofibrinogenaemic when the fibrinogen level is <1.5g/L
- Platelets tend to approach inadequate levels only after transfusion of 8 – 10 units PRBC. Despite adequate levels, platelet function is affected by hypothermia and acidosis. Damage control resuscitation minimizing hypothermia and acidosis is therefore critical to survival

