

Every Second Counts!

Reducing the time to transfusion in major obstetric haemorrhage during elective caesarean section while minimising wastage.

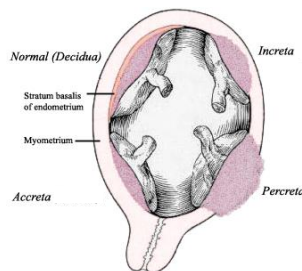
Dr James Crockett – Staff Grade Anaesthetist SHSCT
Mr Graham Scott - Lead Biomedical Scientist (Haematology) SHSCT
Dr Aidan Cullen – Consultant Anaesthetist SHSCT

Introduction

- The management of major obstetric haemorrhage during elective caesarean section is a huge challenge to anaesthetic, obstetric, midwifery and lab based teams.
- Successful outcome depends on numerous factors including risk assessment, ability to predict major haemorrhage, meticulous planning, sound communication, clear leadership and excellent teamwork,
- Early access to blood products and haemostatic interventions is imperative.

The Problem

- Certain clinical scenarios have an element of predictability (eg. an abnormally adherent anterior placenta) and increase the risk of major haemorrhage during operative delivery. Bleeding when it occurs is often torrential and occurs early.



- In scenarios such as that described above clinicians traditionally had two options for accessing blood products.
- Cross-matched blood can be stored in the lab and accessed if and when needed. This approach inevitably leads to a short delay in time to transfusion. During major obstetric haemorrhage even a short delay in haemostatic resuscitation can contribute to adverse outcomes.
- Alternatively clinicians can request blood products and have them delivered to the operating room in a standard transport box prior to commencing the procedure. This approach works well if transfusion is required.
- Wastage of unused products is not uncommon.

The Solution

- B Medical Systems® MT4 Blood Transport Boxes enable easy storage and transport of blood.
- They carry up to four blood products in a **sealed, validated, temperature controlled** box.
- In situations when predictability exists about major haemorrhage and any delay in access to products could be disadvantageous, this solution has enabled teams rapid access to products while minimising risk of wastage



Single Page SOP

'Ready-To-Go' BLUE BLOOD BOX - Key Principles and SOP

In certain clinical scenarios with a high risk of major haemorrhage, it may be deemed favourable to have cross-matched blood *o/f* FFP in close proximity to the patient.

The B Medical System MT4 Blood Transport Box (BLUE BOX) allows up to a maximum of four units of packed red cells, *o/f* FFP, to be prepared by the lab, sealed and transported to the clinical area. The products can thus be rapidly accessed should they be needed.

This system is not intended to replace the current 'RED ALERT' major haemorrhage protocol but rather complement it. It is specific planned episodes of care where a degree of predictability exists (eg. an anterior placenta praevia with potential abnormal adherence). Clinicians are also supported to the 'Anaesthetic Management of Life-Threatening Haemorrhage' guideline and 'Guidelines for the Management of Massive Blood Loss', both available on the Trust intranet.

This system has the potential to minimise wastage. Unopened boxes are able to be returned to the Blood Bank (as long as within 4-hour period) and unused units put back into circulation. Unused FFP will be wasted.

Decision to Request Ready-To-Go Blood Box (Available 0900 -2000hrs)

- Decision making is patient specific and multidisciplinary. Anaesthetic and obstetric/gynaecological senior doctors must have discussed and agreed the indication.
- The Blood Bank (C&M and D&H) require 3 hours to prepare the box. It may be available in less than this time however 3 hours is the time teams should allow when planning for knife-to-skin. Once confirmed as ready to collect, it is the responsibility of the clinical team to organise collection with the portering staff.
- Teams request a BLUE BOX by phoning the Blood Bank at the earliest opportunity, explaining the clinical scenario and outlining the products required.

Intraoperative Use

- The box is sealed with a cable tie. **THE CABLE TIE SHOULD ONLY BE CUT OPEN IF BLOOD IS DEFINITELY GOING TO BE TRANSFUSED.**
- Cross matched products still require checking as per standard protocol prior to transfusion

Returning the Blue Box

- The system can only be used once in any 24 hour period. Once returned, boxes need to be refrozen. It is paramount that the box is returned to the Blood Bank in a timely fashion.
- All requests for this process will be audited.

Emergency Use: The 'Blue-Box' cannot be used for emergency use/transfer of critically ill patients with ongoing bleeding. Early discussion with Blood Bank is advisable if components are planned to be taken on an interhospital transfer