‘Go with the Flow’

- Lessons from SHOT Haemorrhage cases

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For action by Trusts by April 2011
Critical points in the transfusion process

- Decision to transfuse
- Prescription/request
- Sampling for pre-transfusion testing
- Laboratory testing
- Collection of blood from storage site
- Bedside administration
Key points from NPSA RRR

- Local protocols with a trigger phrase
- Dedicated communicator / coordinator
- Early / easy release of components by lab
- Adequate support (eg porters / transport)
- All cases reviewed by Hospital Transfusion Committee and delays or problems investigated locally / reported externally
MAKE A PHONE CALL

to the Blood Bank
or
on-call Haematology BMS

Tell them...

- Situation
- Patient Details
  - Name
  - Sex
  - ID number
- What blood component is required, how much and how soon.

TAKE SAMPLES

Label them properly and ensure they get to the lab.

- Grouping sample
- FBC
- Coagulation screen
Presentation of bleed (N=211)

- Gastrointestinal bleed: 66
- Obstetric haemorrhage: 48
- Vascular bleed / surgery: 45
- Trauma (blunt): 12
- Trauma (penetrating): 11
- Other speciality: 29
Components used for adults

- 27% cases used O Negative (range 1 - 4 units)
- 50% cases used 0 - 4 units red cells
- 30% cases used 5 – 8 units red cells
- 20% cases used 9 – 40 units red cells
- Wastage:
  - 80 red cells
  - 170 FFP
  - 20 platelets
Failure to monitor transfusion requirements during a GI haemorrhage

- An elderly patient was admitted to the MAU with a haematemesis and an initial Hb of 106 g/L
- She had further episodes of vomiting blood
- Five units of red cells were transfused before a repeat Hb was performed, which was 204 g/L
- The patient was recognised to have circulatory overload and died shortly thereafter
Lack of knowledge around major haemorrhage protocol (1)

- A middle-aged male was admitted to A&E with a massive haematemesis and received 2 litres of colloid
- No Incident Communication Coordinator had been identified in the ED and the transfusion laboratory had not been contacted
- The clinical staff in the ED were unsure of how to access the 2 emergency O RhD negative units kept in the laboratory
Lack of knowledge around major haemorrhage protocol (2)

- A further 2 units of red cells were then requested and issued as group specific.

- The clinicians also requested FFP and cryoprecipitate but were refused on the basis that a coagulation screen should have been interpreted by a haematologist prior to issue.

- The patient subsequently arrested and died, having received 10.5 L of colloid and 4 units of red cells.
Delay in obtaining units following major haemorrhage protocol being initiated

- A child involved in a road traffic accident (RTA) was found to be asystolic at the scene and cardiopulmonary resuscitation (CPR) was commenced.
- The ambulance staff had alerted the ED to major blood loss and had requested blood to be available on arrival.
- There was a delay issuing emergency O Negs as there was no unique patient ID number available on arrival in the ED.
Failure to replace blood volume after post partum haemorrhage

- A young woman suffered massive haemorrhage following a ventouse-assisted delivery.
- The MH protocol was activated, six units of blood were delivered within 5 minutes and one was commenced.
- She was transferred to theatre - the blood loss was unclear with losses recorded in both the delivery suite and theatre. A second unit was started after an hour.
- After 2 hours, she suffered cardiac arrest from which she could not be resuscitated despite transfusion of 12 units of blood and 3 units of FFP – too little, too late.
Delay in patient transfusion during surgery caused by IT malfunction

- A 75 year old man was bleeding in theatre during repair of AAA
- 6 units of group-specific blood were issued to the theatre refrigerator using the electronic blood tracking system
- The units were retrospectively cross matched, but the laboratory computer sent a message to the theatre refrigerator to quarantine the blood, - theatre staff were denied access to the refrigerator
- Eventually the refrigerator was unlocked and the blood obtained after a 25 minute delay
Obstetric major haemorrhage with delay in transfusion caused by a fire alarm

- A 40 year old woman was bleeding excessively during elective caesarean section when the fire alarm sounded
- The obstetrician and theatre staff were aware of the alarm, but surgical management of the bleeding continued
- They telephoned the blood bank, but there was no answer, so the general manager (outside the building with evacuated staff) was contacted and located transfusion staff who were cleared to return to the laboratory
- Major haemorrhage pack was issued after a delay
Misidentification during multiple trauma

- Multiple RTA involving 5 victims
- 2-year old female allocated ‘Unknown Female 1’
- Child’s mother allocated ‘Unknown Female 2’
- Theatre nurse volunteered to help ED teams
- Nurse administered blood for ‘Unknown Female 2’ to the child, as she interpreted the ‘2’ as the age of the patient
- The child died of her injuries soon afterwards
Lack of correct final identity check leads to a Haemolytic Transfusion Reaction

- A patient with a haematemesis needed urgent transfusion, but the wristband was covered with blood and could not be read by a scanner.

- A compatibility form filed in the patient’s notes, which belonged to another patient (who also had blood available), was used to provide identifiers for collecting blood.

- The O RhD Positive patient was transfused with >50 mL of A RhD positive red cells before the error was noticed.

- The patient was admitted to ITU with intravascular haemolysis and renal impairment.
Communication failure results in inappropriate transport of red cell units

- Request from ED for 4 units of blood which was placed in the laboratory fridge ready for collection.

- 2 hours later, the ED called asking if blood was ready, as the patient was being transferred - but the BMS found that it had already been removed.

- The receiving hospital contacted the lab to inform them that 1 unit had arrived with the patient, in a supermarket carrier bag.
Unlabelled components transfused to wrong patient in error

- *Platelets for a patient on ITU were delivered to the ED by taxi from BTS*

- *The ED had also requested platelets for a different patient.*

- *ED took delivery of the platelets, assumed they were for their patient, and transfused them despite there being no documentation or label with any patient details.*
Blood gas analyser Hb used as trigger for emergency transfusion

- An Hb of 50 g/L was obtained from an ED blood gas machine on a female patient who was asymptomatic and not actively bleeding

- Two units of O RhD negative red cells were requested as an emergency

- One unit of O neg had already been transfused when the laboratory result became available which was 89 g/L

- The second unit of O neg was wasted due to inappropriate storage (on the patient’s bed)
Bypassing electronic safety systems leads to transfusion of incorrect units

- During a massive trauma incident involving an ‘unknown male’ with a secure emergency ID number and validated blood group....
- A nurse accessed the blood issue fridge by pressing the ‘emergency override’ button and removed 4 units available for a different ‘unknown male’ from an earlier incident
- All four units were taken to the ED and transfused to the incorrect patient without any identification checks being made at the bedside
Summary of key issues noted in SHOT case reports

- Failure to initiate / stand down MH protocol
- Continuity of care
  - Completely appropriate intensive resus in the ED continued without review or senior overview when patient is transferred between clinical areas
  - Lessons from military with consultant led care
- Inappropriate use of MH protocol
  - Activation of MH protocol to provide routine blood cover in theatre cases when no pre-op G&S or crossmatch performed
Key Learning Points

- Continue to sample, monitor and observe during a transfusion
- Appropriate assessment and prescription
- Good patient ID at all stages
- Communication with laboratory
- Early/easy release of components by laboratory
- Clear instructions / easy to follow protocol
- Do your own job well
Communication
Thanks to

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