Putting Patients First

When and how to question requests for blood components

Right blood

Right patient

Right time

Every time!

TRANSFUSING the RIGHT BLOOD to the RIGHT PATIENT

Order the blood and document the outcome of transfusion

Take blood sample and label

Test blood group and crossmatch

Collect blood and deliver clinical area

Check the blood and start the transfusion

Take observations and care for the patient

Would you like ~~chips~~ FFP with that?

Where you can <u>really</u> make a difference

Starting with the patient; what do they know?

- How they feel – may have symptoms of anaemia
- That blood could make them better
- That blood may do them harm
- That blood is in short supply
- Too ill to think about blood
- Too many other things to consider
- Trust doctors and nurses to make the right decision
- No idea about Biomedical Scientists!

Next, the Doctors & Nurses looking after the patient

- Know how ill the patient is and what the treatment plan is
- Know how and when to give blood
- That blood may be harmful
- That blood is in short supply
- Under pressure
- Work as part of a team
- Don’t deal with transfusion every day
- Different experiences of interaction with Biomedical Scientists

What about Biomedical Scientists?

- Are dependent on what they are told about the patient
- Know a lot about transfusion
- That blood may be harmful
- That blood is in short supply
- Work under (different) pressure
- Work as part of a team, or alone
- May be unsure of some of the clinical aspects of patient care and can’t give clinical advice

Three ways of doing your job

1. Give what is asked for – no more and no less

2. Consider whether request for transfusion is compliant with local guidelines and challenge when it is not

3. Use professional knowledge to offer alternatives to that requested or give advice about special requirements

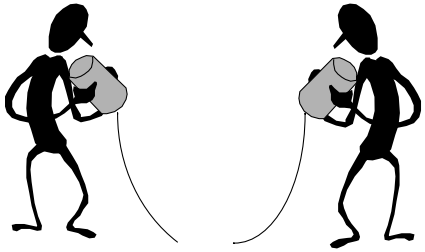
Putting Patients First in an Emergency

“a serious, unexpected, and often dangerous situation requiring immediate action”

“Urgent: Requiring immediate action or attention”

“Routine: Performed as part of a regular procedure rather than for a special reason”

IF BLOOD IS NEEDED



FOR PATIENTS WHO ARE BLEEDING

HOW MUCH,
HOW QUICKLY?

Delays in blood costs lives…….

How do we respond? Are these all emergencies?

Can you justify cutting corners, bending the rules?

- Major haemorrhage
  - *Or to prevent major haemorrhage*
    - Emergency surgery
      - *Or to allow emergency treatment to go ahead*
        - Critically low blood counts

‘Code Red’

‘2222’

Between 2006 and 2010 there were 11 deaths and 83 incidents where the patient came close to death as a result of the delays in provision of blood in an acute situation

- Team approach (include porters and switchboard)
- Recognise early and communicate clearly
- Pre-agreed protocols and **empowerment of lab staff** supported by training and drills
- Nominate clinical team member to liaise with lab and support services
- Clear message to trigger response ‘Major Haemorrhage Protocol’
- Regularly review activation of MHP
- Report incidents to SHOT

‘Major Haemorrhage’

NHS National Patient Safety Agency

Rapid Response Report

NPSA/2010/RRR017

From reporting to learning 21 October 2010

The transfusion of blood and blood components in an emergency

Issue

The urgent provision of blood for life threatening haemorrhages requires a rapid, focused approach as excessive blood loss can jeopardise the survival of patients. Early recognition of major blood loss and immediate effective interventions are vital to avoid hypovolaemic shock and its consequences. One such action is the rapid provision of blood and blood components, for which effective communication between all personnel involved in the provision and transportation of blood is key.

Evidence of harm

During the period October 2006 to September 2010, the National Patient Safety Agency (NPSA) received reports of 11 deaths and 83 incidents in which a patient was harmed as a result of delays in the provision of blood in an acute situation.

Reducing the risk of harm

This Rapid Response Report (RRR) is intended to focus the attention of hospitals on the systems in place and the human factors that impact on the efficient provision of blood in emergencies. Other guidance available that should be considered alongside this RRR includes guidance issued by the British Committee for Standards in Haematology (2006); the recommendations of the Confidential Enquiries into Maternal and Child Health (CEMACH) (2007) for a protocol for the management of massive obstetric haemorrhage; and the Royal College of Obstetricians and Gynaecologists guidance *Blood transfusion in obstetrics* (2008).

For IMMEDIATE ACTION by the NHS and independent (acute) sector. Actions should be led by an executive director nominated by the Chief Executive, working with the Chair of the Hospital Transfusion Committee. Deadline for ACTION COMPLETE is 26 April 2011.

Local organisations should ensure that:

1. The hospital transfusion committee reviews the local protocols and practices for requesting and obtaining blood in an emergency (including out of hours), ensuring that they include all the actions required by clinical teams, laboratories and support services, e.g. portering and transport staff/drivers and any specific actions pertinent to sites without an on-site transfusion laboratory.
2. Local protocols enable the release of blood and blood components without the initial approval of a haematologist although they should be advised of the situation at the earliest opportunity.
3. Staff (clinical, laboratory and support staff) know where to find the massive blood loss protocol in all relevant clinical and laboratory areas and are familiar with it, supported by training and regular drills.
4. The blood transfusion laboratory staff are informed of patients with a massive haemorrhage at the earliest opportunity.
5. Clinical teams dealing with patients with massive haemorrhage nominate a specific member of the team to co-ordinate communication with the laboratory staff and support services for the duration of the incident.
6. There is a clear and well understood trigger phrase to activate the massive blood loss protocol, for example *“I want to trigger the massive blood loss protocol [*and state location e.g. *delivery suite]”* and all subsequent communications between clinical areas and laboratory staff should be preceded by the use of a locally agreed trigger phrase such as *“This call relates to the massive blood loss protocol [and location]”.*
7. All incidents where there are delays or problems in the provision of blood in an emergency are reported and investigated locally, and reported to the NPSA and the Serious Hazards of Transfusion (SHOT) scheme (www.shotuk.org).
8. Each event triggering the massive blood loss protocol is recorded and reviewed by the hospital transfusion committee to ensure local protocols are applied appropriately and effectively.

Supporting information on this RRR is available at www.nrls.npsa.nhs.uk/alerts. Further queries should be directed to rrr@npsa.nhs.uk; telephone 020 7927 9890.
The NPSA has informed NHS organisations, the independent sector, commissioners, regulators and relevant professional bodies in England and Wales.

Gateway ref: 14960

Scenario 1

Ward: I am activating the MHP. The patient Mrs A is not known to this hospital. She is on Labour Ward. DOB ../../.. and hospital number 1234567. I am sending blood samples but we need blood immediately.

Lab: Thank you. I understand you are activating the major haemorrhage protocol. You have 2 units of emergency O negative the labour ward fridge which you can have immediately. I will prepare 6 further units of O negative blood and will start to thaw out the FFP which will be available in 30 minutes. There are platelets available if you need them.

Ward: Thank you. My name is Dr Y and I am the blood monitor. I will let the team know.

Lab: Thank you Dr Y. Please send a porter to collect the blood now. As soon as we get the sample we can change to group-specific blood. Please let us know how things are going and what you need.

Short conversation. Everyone calm and business-like. Both know what to expect. Porter arrives to collect blood and delivers blood sample.

Scenario 2

Ward: My patient is bleeding to death. I need blood now. Where is it?

Lab: This is the first I have heard of it. There was no MHP call. Which patient are we talking about?

Ward: I don't know. Just give me O negative, and FFP.

Lab: So you are activating the MHP? Send us some samples including a blood group and clotting screen.

Ward: You don't understand I need it now! The porter is on his way. This is an emergency!

Lab: I assume you want uncrossmatched blood then. Can I have the patients name and a blood sample?

Ward: Why do you need a sample? Just send me O negative.

Phone goes dead. Porter arrives at lab but has to wait for blood while lab contact ward for further details. Everyone unhappy.

Outcomes

Scenario 1: Several further calls from the same doctor in the next 60 minutes. Haematologist discusses the case with the obstetric anaesthetist.

Blood components:

- 2 units O negative, 6 units O negative (5 returned untransfused), 12 units group specific (A+) RBCs,
- 8 units (A) FFP, 2 (A+) platelets, 2 (A) cryo

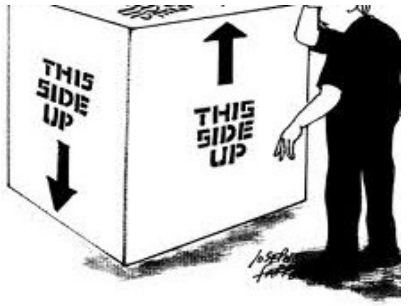
Scenario 2: Obstetric anaesthetist phones haematologist to complain. Ward sister, another doctor and haematologist phone lab all asking for the same thing. Haematologist can't get through to switchboard, then can't get through to lab.

Blood components:

- 20 units O negative,
- 8 units (AB) FFP, 2 (A-) platelets

In both situation surgical intervention eventually stops the bleeding and the woman and baby survive. In scenario 1, the lab is contacted to inform them of the happy outcome and to say 'thank you'. In scenario 2, a clinical incident report is made by the obstetric team.

Mixed messages



- You ask for samples but they think you mean that you cannot issue any blood until you have the blood results
- A MHP is called but they say they can wait for cross-matched blood
- They don’t call the MHP because they have the situation ‘under control’

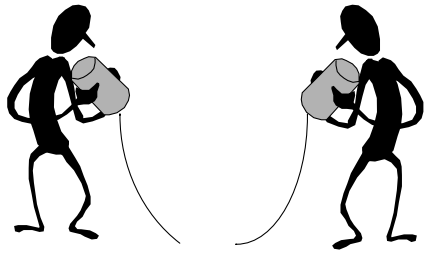
Your responsibility is to

- Establish good effective lines of communication
  - Discuss any possible delays as soon as you are aware of them
- Do the safest thing;
  - The worst thing to do is to give ABO incompatible blood
  - Other RBC antibodies can be ignored if the patient would die for lack of blood
- Keep providing blood and components
  - until told to stand down
- When blood results and clinical information become available,
  - liaise with the ward and the haematologist to tailor therapy
- And its always good if someone says …

Putting Patients First
in a non-emergency situation

but everyone is special and
somehow it is always urgent!

IF BLOOD IS NEEDED



FOR PLANNED SURGERY

FOR PATIENTS WHO ARE BLEEDING

FOR PATIENTS WHO ARE ANAEMIC

HOW MUCH, HOW QUICKLY?

WOULD YOU WANT A BLOOD TRANSFUSION?

THERE ARE SOME SITUATIONS WHERE BLOOD TRANSFUSION IS ESSENTIAL, BUT FOR MANY PATIENTS THIS NEED CAN BE REDUCED OR AVOIDED

Why are blood and components requested?

Two groups:

1. **Therapeutic**

   To treat low Hb, low platelets, abnormal clotting if patient is actively bleeding

2. **Prophylactic**

   To prevent bleeding or to stand-by for surgery\procedure in case of bleeding

Clinical Decision Making

1. **What are the blood results?**
2. **What is the cause of the abnormal result?**
3. **How is the patient?**
4. **Is transfusion the best treatment for the patient?**
5. **Has the patient been consulted and consented?**
6. **What are the risks and benefits of transfusion?**
7. **Do I need some help and advice?**

Clinicians contact the lab:

1. To order the blood	2. To discuss the transfusion with someone	3. To ask about dosage, special requirements, timing

What can, and should, the transfusion department do?

Using Indication Codes in the Laboratory

- Evidence based
- Regularly updated
- Locally agreed
- Refer if non-emergency and no code

RBCs: R1 to R7

FFP: F1 to F6

Cryoprecipitate: C1 to C6

Platelets: P1 to P10

Obtain from NHSBT Hospital Liaison Practitioner or Customer Service Manager

Indication Codes for Transfusion - An Audit Tool

NHS Blood and Transplant

Issued 06/09

The indications for transfusion provided below are taken from UK national guidelines for the use of blood components.
Each indication has been assigned a number, which may be used by clinicians when requesting blood or for documentation purposes. Specific details regarding the patient's diagnosis and any relevant procedures to be undertaken should also be provided.
These are current guidelines and may change depending on new evidence.

■ recently updated indication codes

Red cell concentrates

R1. ***Acute blood loss***

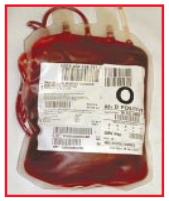
In patients with massive haemorrhage, the haemoglobin concentration (Hb) is a poor indicator of acute blood loss and empirical decisions about the immediate use of red cell transfusion are required by clinicians experienced in rescuscitation. The following is a guide to the likelihood of the need for blood transfusion, although estimation of blood losses may be difficult:-

- < 30% loss of blood volume (< 1500ml in an adult): transfuse crystalloids. Red cell transfusion is unlikely to be necessary.
- 30-40% loss of blood volume (1500-2000ml in an adult): rapid volume replacement is required with crystalloids. Red cell transfusion will probably be required to maintain recommended Hb levels.
- >40% loss of blood volume (>2000ml in an adult): rapid volume replacement including red cell transfusion is required.

When normovolaemia has been achieved/maintained, frequent measurement of Hb (for example, by near patient testing) can be used to guide the use of red cell transfusion. Where future blood loss is unpredictable (e.g. gastrointestinal haemorrhage), a Hb threshold of 10g/dl to guide transfusion is recommended; otherwise the objective is to maintain circulating blood volume and Hb >7 g/dl in otherwise fit patients, and >8g/dl in elderly patients and those with known cardiovascular disease.

Peri-operative transfusion

Many patients undergoing elective surgical operations will not require transfusion support if their Hb is normal before surgery. Assuming normovolaemia has been maintained, the Hb can be used to guide the use of red cell transfusion.



R2. Hb < 7g/dl.

R3. Hb < 8 g/dl in a patient with known cardiovascular disease, or those with significant risk factors for cardiovascular disease (e.g. elderly patients, and those with hypertension, diabetes mellitus, peripheral vascular disease).

Critical Care

R4. Transfuse to maintain the Hb >7g/dl, and >8g/dl in elderly patients and those with known cardiovascular disease.

Post-chemotherapy

R5. There is no evidence-base to guide practice. Most hospitals use a transfusion threshold of a Hb of 8 or 9g/dl.

Radiotherapy

R6. There is little evidence-base to guide practice. Suggest transfuse to maintain the Hb >10g/dl.

Chronic anaemia

R7. Transfuse to maintain the haemoglobin concentration to prevent symptoms of anaemia. Many patients with chronic anaemia may be asymptomatic with a Hb >8g/dl.

Fresh frozen plasma

(Dose - 12-15 ml/kg body weight equivalent to 4 units for an adult)

F1. Replacement of single coagulation factor deficiencies, where a specific or combined factor concentrate is unavailable e.g. factor V.

F2. Immediate reversal of warfarin effect, in the presence of life-threatening bleeding. FFP only has a partial effect and is not the optimal treatment; prothrombin complex concentrates are preferred.

F3. Acute disseminated intravascular coagulation (DIC) in the presence of bleeding and abnormal coagulation results.

F4. Thrombotic thrombocytopenic purpura (TTP), usually in conjunction with plasma exchange.

F5. Massive transfusion; local protocols for serious bleeding should be followed and may recommend empirical use of FFP and a specific ratio of FFP to red cells.

F6. Liver disease; patients with a PT within 4 seconds of the control value are unlikely to benefit from the use of FFP.

Cryoprecipitate

■ *Dose - 2 pooled packs, equivalent to 10 single units, for an adult).*

Cryoprecipitate should be used in combination with FFP unless there is an isolated deficiency of fibrinogen.

C1. Acute disseminated intravascular coagulation (DIC), where there is bleeding and a fibrinogen level <1g/l.

C2. Advanced liver disease, to correct bleeding or as prophylaxis before surgery, when the fibrinogen level <1g/l.

C3. Bleeding associated with thrombolytic therapy causing hypofibrinogenaemia.

C4. Hypofibrinogenaemia (fibrinogen level <1g/l) secondary to massive transfusion.

C5. Renal failure or liver failure associated with abnormal bleeding where DDAVP is contraindicated or ineffective.

C6. Inherited hypofibrinogenaemia, where fibrinogen concentrate is not readily available.

Platelet concentrates

(Dose - 15 ml/kg body weight for children <20kg; 1 adult therapeutic dose for adults and older children)

Bone marrow failure

P1. To prevent spontaneous bleeding when the platelet count <10 x 10^9/l.

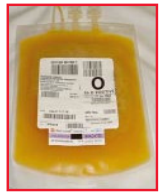
P2. To prevent spontaneous bleeding when the platelet count <20 x 10^9/l in the presence of additional risk factors for bleeding such as sepsis or haemostatic abnormalities.

P3. To prevent bleeding associated with invasive procedures. The platelet count should be raised to >50 x 10^9/l before lumbar puncture, epidural anaesthesia, insertion of intravascular lines, transbronchial and liver biopsy, and laparotomy, and to >100 x 10^9/L before surgery in critical sites such as the brain or the eyes.

Critical care/surgery

P4. Massive blood transfusion. The platelet count can be anticipated to be <50 x 10^9/l after 2 x blood volume replacement. Aim to maintain platelet count >75 x 10^9/l, which allows a margin of safety to ensure platelet count >50 x 10^9/l. Keep the platelet count >100 x 10^9/l if multiple, eye or CNS trauma.

P5. Bleeding, not surgically correctable, and with associated acquired platelet dysfunction e.g. post-cardiopulmonary bypass, possibly combined with the use of potent anti-platelet agents such as clopidigrel.



P6. Acute disseminated intravascular coagulation (DIC) in the presence of bleeding and severe thrombocytopenia.

P7. Inherited platelet dysfunction disorders e.g. Glanzmanns thrombasthenia with bleeding or as prophylaxis before surgery.

Immune thrombocytopenia

P8. Autoimmune thrombocytopenia, in the presence of major haemorrhage.

P9. Post-transfusion purpura, in the presence of major haemorrhage.

P10. Neonatal alloimmune thrombocytopenia, to treat bleeding or as prophylaxis to maintain the platelet count >50 x 10^9/L.

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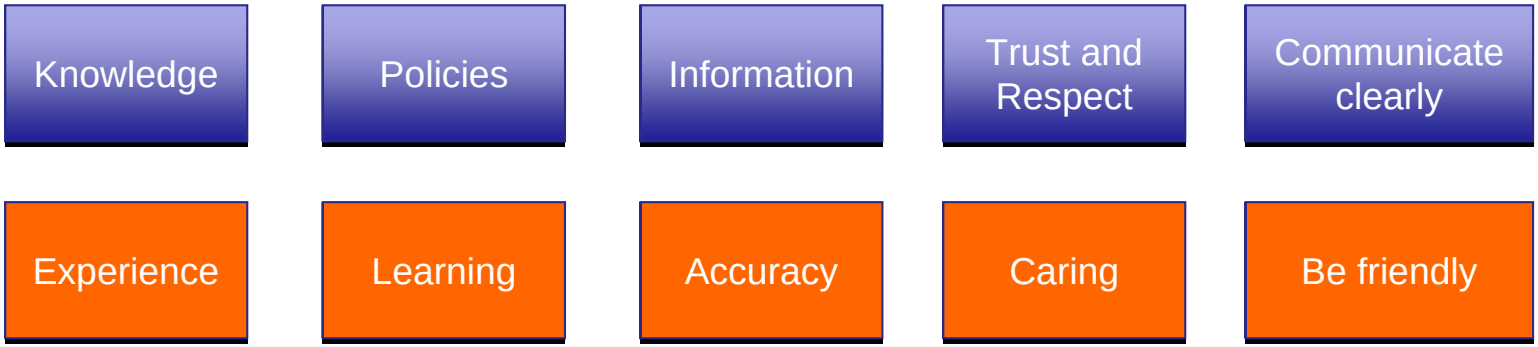
Red Cells Triggers

Transfusion Indication	Trigger
Healthy stable patient < 65 years	7 g/dl
Healthy stable patient > 65 years	8 g/dl
Evidence of cardiac or cerebral disease	9 g/dl
Symptomatic anaemia, any Hb <10 g/dL	
Significant active bleeding NB: If significant bleeding anticipated, activate the major haemorrhage protocol	
Patients on radiotherapy, chemotherapy or other bone marrow failure	10 g/dl

Work as a team to put patients first



Empowerment is……

How to change what they hear from this

To what you mean which is this

To thinking they have got this!

We have Octaplex in stock for emergency warfarin reversal. The protocol is on the intranet. Shall I ask the haematologist to call you?

Yes, that sounds like a reasonable request, I am sure we can do that for you

This patient has red cell antibodies so we need to get special blood and that might take a little longer. It was very helpful that you let me know in advance.

These sort of patients can need irradiated blood. Can you find out for me so that I can order the right thing?

Our hospital policy is not to transfuse overnight but I will get that ready for you so you can start the transfusion first thing.

Thank you for telling us about this transfusion reaction so quickly. It means that we can prevent any harm coming to other patients having blood from the same donation

It is safer to prescribe for children in mL so you don't over-transfuse. Do you have the weight and we can work it out together?

In conclusion

- Biomedical scientists are a very important part of the team that delivers good transfusion care to patients
- By putting the patients first we build up trust and respect and make the job more satisfying
- Keep up-to-date and share your knowledge
- If things go wrong, learn the lessons and implement change so it gets better next time!