RED CELL TRANSFUSION – Nottingham Neonatal Service, Guideline E1

Full Title of Guideline: Red cell transfusion in neonates, Guideline E1

Author (include email and role): Dr Jessica Morgan – Neonatal Grid Trainee
Dr Anjum Deorukhkar – Consultant Neonatologist
(previous version Dr Shalini Ojha)

Division & Speciality: Division: Family Health - Children
Specialty: Neonates

Version: 7

Ratified by: Nottingham Neonatal Service Clinical Guidelines Group

Scope (Target audience, state if Trust wide): Staff of the Nottingham Neonatal Service, Blood transfusion services.

Review date (when this version goes out of date): April 2024

Explicit definition of patient group to which it applies (e.g. inclusion and exclusion criteria, diagnosis): Babies under care of Nottingham Neonatal Service that meet inclusion criteria identified within guideline

Changes from previous version (not applicable if this is a new guideline, enter below if extensive): Thresholds for blood transfusion according to corrected gestational age. Key practice points.

Summary of evidence base this guideline has been created from: The contemporary evidence base has been used to develop this guideline. References to studies utilised in the preparation of this guideline are given at the end. Consultation with Hayley Bond, Lead Transfusion Practitioner, Blood Transfusion Department

This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt contact a senior colleague or expert. Caution is advised when using guidelines after the review date or outside of the Trust.

Quick Reference Guide

1. Background and summary of evidence
2. Patient group
3. Sampling information and request specifications
4. Indications for red cell transfusion and threshold tables
5. Procedure for blood product transfusion and possible complications
6. Jehovah’s witnesses
7. Audit points
8. Related guidelines
Appendix 1 Closed circuit blood transfusion set-up
Appendix 2 Parent factsheet
1. Background and Summary of Evidence

Haemoglobin (Hb) decreases during the first few weeks of life in all infants usually in the absence of clinical signs or symptoms of anaemia (1,2). Preterm babies often require “top-up” blood transfusions mainly because of frequent sampling for laboratory investigations but also sometimes because of a low volume of placental blood received, and a poor erythropoietic response to anaemia. When deciding whether to transfuse a baby, the Hb should be used alongside other clinical parameters to determine if there is evidence of clinically significant anaemia and risk vs benefit of red cell transfusion considered.

There is considerable controversy about the ‘trigger’ points for transfusions in preterm babies and this is because the Hb is not a good indicator of the degree of significant anaemia (3). i.e. a low Hb does not necessarily imply clinically significant anaemia. The indications for transfusion have been based mainly on consensus opinion rather than scientific evidence. Clinical features ascribed to anaemia have been described in numerous studies and these were summarised in an excellent review of the subject (4). In summary, the physiological impact of anaemia is affected by so many variables that it is difficult to define clinical or laboratory features that determine when intervention is required. All of the guidelines published are based on consensus opinion in the absence of clear benefits of blood transfusions. However, there are significant adverse effects of transfusions (4) that not only include infectious (including vCJD) complications but also the risk of fluid overload, skin injury due to tissue IV cannulae, and a possible increased risk of ROP, NEC, IVH BPD (2,7-10,18). Therefore, transfusions should be limited to the minimum number required for the infants’ optimal well-being. It is useful to note however that simple approaches such as reducing the frequency of blood sampling are effective (5) Nearly half of RBCT given to ELBW infants are given during the first 2 weeks of life; weekly phlebotomy losses during this period average 10–30% of the total blood volume (10–25 mL/kg) (18,19).

Several consensus transfusion guidelines have been published all of which are probably equally valid (4). The transfusion guidelines followed by the US Multicenter Human Erythropoietin trial (6) were more stringent than most but the excellent outcome and low transfusion rates even in infants who did not receive erythropoietin suggest that there are no adverse effects at least in the short term of following these conservative transfusion practices. There are a few randomised controlled trials (14,15) comparing liberal and restrictive transfusion guidelines. The studies found that neonates in restrictive group received fewer RBC transfusions without an increase in mortality or morbidity based on several clinical outcomes. The long-term safety of any transfusion guidelines in comparison to others has not been established. There are currently 2 ongoing trials looking at

---

**Key Practice Points**

- Appropriate use of phlebotomy, particularly in extremely preterm infants, can reduce the number of red cell transfusions required.
- Use a baby’s corrected gestational age to consider if transfusion is indicated as per table 1 and 2.
- If blood transfusion is required, use volumes of 20ml/kg and transfuse over 3.5 hours as standard.
- Trust procedures should be followed for the authorisation, collection and administration of blood products.
- Please ensure all blood bottles are HANDWRITTEN and legible. Patient ID labels may be used for request cards.
- All patients should receive CMV negative and irradiated blood products.
longer term neurodevelopmental outcomes (ETTNO – Effects of Transfusion Thresholds on Neurocognitive Outcome in Extremely Low Birth Weight Infants and TOP – Transfusion of Prematures trials) – the results are awaited (17) and may provide definitive answers on transfusion thresholds in the future. The following guidelines are based on several of these (1,6,7,11,13,15) but have been rationalised slightly.

2. Patient Group

All infants on the neonatal unit. On admission for all newborn infants <1500g or other infants likely to need transfusion (including babies requiring surgical intervention) the following are required:

1. EDTA sample (0.5ml) of neonatal blood for Group and Save*
2. 6ml EDTA samples of maternal blood.

*Patients over the age of 4 months will need a larger sample (minimum 2mls)

3. Sampling information and request specifications

Pre-Transfusion Sample Samples must adhere to Sample Collection and Blood Transfusion Requesting Procedure: CL/CGP/084.

- Blood bottles must not be pre-labelled.
- The details on the form and the sample must be identical.
- Forms must be signed at the cot-side after the blood sample has been taken. The blood bottle must be signed by the individual taking the sample.
- Patients’ details on the blood bottle must include first name, surname, gender, date of birth and hospital number. A patient ID label can be affixed to request cards.
- The date and time the sample was taken should be written on the blood bottle.
- Incomplete or incorrect labelling will not be accepted by the laboratory. No amendments.
- The blood transfusion laboratory may still request a repeat sample where necessary, i.e. if the baby has changed their name.
- If the mother has blood group antibodies samples may be needed from her every 72 hours, please discuss with the blood transfusion laboratory.

Requesting Blood for neonates

- Requesting doctor should ensure that access in the form of patent peripheral IV cannula is in place before ordering blood.
- All babies should receive CMV negative and irradiated blood products.
- If a baby has received intra-uterine transfusions, this should be specified on the blood request form.
- Additional guidance for Exchange Transfusion can be found in the clinical guideline D18 – Exchange transfusion.
- It is good practice to phone blood bank to inform them that blood is being requested to ensure that transfusions occur in a timely manner. The initial telephone request must be followed by a completed cross match form.
- Infants <1000g and/or <28w are most likely to receive multiple transfusions, this likelihood should be documented on the request form and Paedipacks explicitly requested. The use of paedipacks reduces donor exposure for these multiply transfused preterm infants (20-23). Although sequential use of paedipacks may result in the use of older blood, the Age of Red
Blood Cells in Premature Infants (ARIPI) trial reported no effects on clinical outcomes for preterm neonates using red cells of different storage ages (23,24).

- Please note that Pedipacks approximately have 40 ml of packed cells. The dead space of the filter chamber and tubing is a conservative 7 ml which needs to be considered and added to the 20ml/kg for baby. Therefore, sometimes it may be necessary to order more than one Pedipack.

4. Indications for Packed Cell Transfusions

The following are very unlikely alone to be signs of anaemia:-

- tachypnoea
- tachycardia
- poor weight gain
- increased oxygen requirements
- excessive weight gain.

Transfusion does not significantly improve the combined frequency of bradycardia and desaturations or apnoea frequency (12).

Transfusions in low dependency on the neonatal unit are unusual. If a baby’s haemoglobin is found to be below the suggested red cell transfusion threshold during routine blood sampling and the baby is clinically stable, discuss with the neonatal consultant before considering red cell transfusion. The baby’s reticulocyte count is important to consider. Where a patient’s clinical condition allows, avoid administering red cell transfusion overnight.

The tables below are for guidance only. The clinical condition of the baby and the risk of administering or withholding red cell transfusion should be considered on an individual patient basis. Red cell transfusion should be considered for haemodynamic support, when a baby is requiring inotropes or actively bleeding or their respiratory status may be compromised by low haemoglobin. Please refer to the ‘Cardiovascular support in neonates’ (E2) and ‘Neonatal Haemostasis’ (E8) guidelines for additional guidance.

Example

a) A baby born at 24 weeks’ gestation, now 15 days old but requiring high frequency oscillation ventilation in 50% oxygen and inotropic support with an Hb 105 may be appropriate to transfuse red cells based on their overall clinical picture, despite not meeting the transfusion threshold identified in table 1.

b) A baby born at 27 weeks’ gestation, now 33 weeks corrected gestational age, cycling off cpap and requiring low flow oxygen therapy with an Hb 83 would not meet the criteria for transfusion as long as the clinical condition was otherwise stable.

There is no justification for an infant to receive a ‘top-up’ transfusion, simply because they are due to be discharged (23).

DO NOT TRANSFUSE BABIES OF ANY GESTATION WITH AN Hb >140 (g/L)
Table 1. Transfusion threshold for preterm neonates* (<32 weeks corrected gestational age)

<table>
<thead>
<tr>
<th>Postnatal age</th>
<th>Suggested transfusion threshold Hb (g/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ventilated</td>
</tr>
<tr>
<td>First 24 h</td>
<td>&lt;120</td>
</tr>
<tr>
<td>≤ week 1 (day 1-7)</td>
<td>&lt;120</td>
</tr>
<tr>
<td>Week 2 (day 8-14)</td>
<td>&lt;100</td>
</tr>
<tr>
<td>≥ week 3 (day 15 onwards)</td>
<td>&lt;100</td>
</tr>
</tbody>
</table>

* Standard definition of preterm is <37 weeks gestational age at birth but table applies to very preterm neonates (<32 weeks).
** It is accepted that clinicians may use up to 85 g/l depending on clinical situation
† NIPPV, non-invasive positive pressure ventilation

Table 2. Transfusion threshold for infants >=32 weeks corrected gestational age

<table>
<thead>
<tr>
<th>Postnatal age</th>
<th>Suggested transfusion threshold Hb (g/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ventilated</td>
</tr>
<tr>
<td>First 24 h</td>
<td>&lt;120</td>
</tr>
<tr>
<td>≤ week 1 (day 1-7)</td>
<td>&lt;120</td>
</tr>
<tr>
<td>Week 2 (day 8-14)</td>
<td>&lt;100</td>
</tr>
<tr>
<td>Day 15 onwards</td>
<td>&lt;100</td>
</tr>
</tbody>
</table>

A post-transfusion FBC only to confirm a rise in Hb is not needed.

4.1 Acute Blood Loss
This may occur in the newborn due to surgery or sudden iatrogenic blood loss. In this situation the first choice fluid replacement is crystalloid (0.9% saline) but O negative blood may also be necessary if there is no rapid improvement in clinical status. The need for O negative blood during resuscitation in the Delivery Room is very unusual and should only be considered when there is good evidence of fetal blood loss and the baby fails to respond to usual NLS resuscitation procedures. N.B. Even in the presence of a large antenatal haemorrhage due to abruption or other cause, fetal blood loss is unusual. If O negative blood is given as an emergency procedure, it should be given very cautiously and via a UVC as packed cells are acidic and have a relatively high potassium content.
5. Procedure For Blood Product Transfusion

5.1 Requests for Blood Transfusion *(see NUH Trust Transfusion Policy CL/CGP/008)*

- Blood transfusions, platelet transfusions and clotting factors should be ordered when required from the transfusion service. Parents and Guardians should be informed of the indication for blood transfusion and its risks and benefits. A parental information document should be given to parents to read where appropriate. *(Appendix 2)*
- NHSBT leaflets are available from the Transfusion Practitioners
- All staff involved in ordering and administering blood products should undergo regular training (9). **The commonest cause of morbidity associated with blood transfusion is that an error occurs during the checking process.** It is, therefore, vital that procedures are followed.
- Blood transfusion training for all staff involved in the process can be found on the Trust intranet [http://nuhnet/diagnostics_clinical_support/Blood_Transfusion/Pages/section3.aspx](http://nuhnet/diagnostics_clinical_support/Blood_Transfusion/Pages/section3.aspx).
  
  *(This will be moving onto the Electronic Staff Record (ESR/OLM) April 2019)*
- The risk of contracting HIV from blood transfusion is less than 1 in a million. However, the risk of contracting variant CJD is not known and is thus far entirely theoretical. The risk of getting the wrong blood transfused is probably about 1 in 30,000 (10).
- Samples should be obtained, labelled and sent to the lab by the same individual and must be accompanied by the appropriate request form. Patients must be identified using their name-bands, the patient’s details must be written clearly and legibly onto the blood bottle and patient ID label affixed to request form.

Authorisation of Blood Components and Products

This must be completed by a trained registered professional - at this time a Doctor (there are no nurse authorisers in NNU). This person should have completed the BT training and competency.

The Transfusion Record Sheet NUH01008S MUST be completed correctly.

A patient ID label can be affixed to this form but remember this is a carbonated form and a label must be attached to both sheets.

**Collecting and Returning Blood for Transfusion (please ensure working cannula is in place)**

Staff collecting blood must have received the appropriate training and have successfully completed an assessment to ensure they are competent to carry out the procedure. Before collection, they must check details on baby’s wristband against the blood product Transfusion record sheet (TRS). This must include full name, date of birth and ID number and ideally the NHS number and Doctors signature.

Nursing staff MUST complete the bedside check on the reverse of the TRS for the parts before going down to collect the blood.

If correct, the TRS MUST be taken to blood transfusion department.

The process is the same on both sites (City and QMC) and the instructions can be found on the bloodtransfusion training page

  [http://nuhnet/diagnostics_clinical_support/Blood_Transfusion/Pages/section3.aspx](http://nuhnet/diagnostics_clinical_support/Blood_Transfusion/Pages/section3.aspx)

Returning Unused Blood

If the blood has not been out of the fridge for more than 30 minutes it may be returned to the dedicated blood fridge at the blood transfusion laboratory.
Blood collected at 09:15 must be back in blood laboratory fridge by 09:45 if it is not going to be transfused. Unit of blood collected at 09:15 must have transfusion taken down at 13:15. If it has been out for more than 30 minutes it must be returned to the Blood Transfusion Laboratory. Blood must not be stored in ward or domestic refrigerators. If the unit is wasted the ward should generate a DATIX for wastage, this is a requirement by the Trust as it is a cost implication to the Trust. In 2018, wastage of blood products for the neonatal service was found to have decreased with judicious authorisation and this trend will be monitored via the DATIX system.

5.2 Checking and Administration of Blood Transfusion

- The blood pack and TRS should always be independently checked by two experienced registered nurses who have completed neonatal specific training in the administration of intravenous medications in neonates and blood transfusion competency.

- It is important to check name, unit number, date of birth, pack number, blood group, blood for neonatal use (CMV screened, IRRADIATED), and expiry date. If there are any discrepancies then the blood transfusion laboratory MUST be contacted. These checks are TRS against ID band against Compatibility label on unit.

- They should check the correct identification of the patient using wrist bands against TRS and compatibility label on the blood bag.

- On commencing the blood transfusion the TRS should have the donation number from the front of the label (NHSBT label with barcodes) and be dated, timed and signed as started.

- At all stages and for every unit the bedside check should be completed.

- On completion the date and time must be recorded on the TRS.

- The top copy must be returned to Transfusion Practitioner Team via the envelope in reception and the bottom copy filed in the babies notes.

- A full set of baseline observations (temperature, BP, HR, Respiratory rate) must be recorded before the commencement of a transfusion and repeated after 15 minutes as the most serious reactions occur within this time, then hourly until completion.

- Any deviations to the normal range of those observations must be reported immediately to the medical team who should review the baby to eliminate other causes before continuing or discontinuing the transfusion.

- Babies not on monitoring prior to blood transfusion must be monitored during the procedure (see below).

- Blood MUST always be authorised on the TRS (Transfusion Record Sheet).

- If there are any discrepancies do not give the blood and contact the blood transfusion lab.

- **Prescribe 20 ml/kg of packed cells.** This relatively larger volume is to minimise the number of transfusions and donor exposures. Top-up transfusions in excess of 20 mL/kg are not recommended because of the risk of transfusion-associated circulatory overload (TACO) (23).
• Blood is transfused over 3.5 hours to ensure the transfusion is completed within four hours of being removed from the fridge as per Hospital policy. So allowing for 30 mins to collect the blood and check the cannula etc. i.e. at the rate of about 5.7ml/kg/hr.

• If a transfusion is interrupted (i.e. tissued cannula), the emphasis should be to avoid extra donor exposure either by continuing the transfusion or requesting additional blood from the same donor.

• Blood is transfused through a sterile, dedicated blood administration set with a pump that has a pressure monitoring device and a volume limit setting feature.

• Gloves should always be used when handling blood products. When connecting the blood giving set do not disconnect the blood bag from the giving set to avoid spillage and contamination see Appendix 1.

• Blood transfusions may be given through peripheral or central lines but not through the arterial or long lines.

• Drugs are never added to blood or blood products. Parenteral nutrition may not be given through the same lumen of a catheter as a blood transfusion. However, separate lumens of a double lumen catheter may be used for these infusions.

• Furosemide is not given routinely as a slow transfusion is well tolerated. Furosemide may be given cautiously (1mg/kg) only when there is a significant risk of fluid overload, e.g. in presence of a PDA. Where indicated it should be clearly prescribed as a single dose on prescription chart.

5.3 Monitoring and Observations During Blood Transfusion

• Record baseline observations of BP, temp, heart and respiratory rate prior to commencement of transfusion.
• Monitor heart rate and ECG throughout transfusion.
• Monitor temperature before, at 15 minutes, 30 minutes, one hour and hourly during the transfusion.
• Baseline observations should be recorded at the completion of the transfusion.
• Observe for apnoeas & bradycardias.
• Observe for signs of fluid overload: increased respiratory rate, tachycardia, oedema.
• Any deviations to the normal range of those observations must be reported immediately to the medical team who should review the baby to eliminate other causes before continuing or discontinuing the transfusion.

5.4 Complications of blood transfusion

The true incidence of adverse outcomes in neonates is not known and may be underdiagnosed due to underlying respiratory problems in the population receiving transfusion (17)

The evidence regarding the risks of giving feeds during a transfusion is not clear. Holding feeds during transfusion can be considered.

In suspected haemolytic transfusion reaction urgent action is warranted. However, these are thought to be rare rare in the neonates, as neonates do not produce their own agglutinins (anti-A, anti-B)

• Stop the transfusion and call for medical assistance
• Ensure adequacy of patient’s airway, respiration and circulation
• Check patient ID, compatibility label on unit being transfused and TRS.
• Take down blood pack and administration set (leave connected) and place in waterproof container.
• Maintain IV access
• Inform nurse in charge who should urgently notify medical staff
• Ensure that medical team discuss further management with the on-call Haematology Medical Staff
• Inform blood transfusion laboratory. They will send a Transfusion Reaction Ward Form to be completed by the attending medic. Please return to the laboratory ASAP
• Monitor urine output (catheterise if necessary). Test urine for presence of haemoglobin and urobilinogen.
• Send baseline FBC, Coag (PT/APTT/FIBRINOGEN), U&E's and LFT's
• Frequent observations should be continued until the patient’s condition is stable.
• Take a fresh cross-match sample and send to the blood transfusion laboratory along with the blood pack and administration set. Also return any empty or unused blood packs to Blood transfusion laboratory
• Refer to trust Recognition and Management of Transfusion Reactions Procedure: CL/CGP/083 (pages 18-23 shows the procedure to follow)
• Complete an incident (DATIX) form

Storage

Blood transfusion should begin as soon as possible after delivery. If transfusion is delayed the blood should be returned to the refrigerator if it has been out for less than 30 minutes, but if it is more than 30 minutes since it was collected you have got 4 hours to give the blood. The transfusion must be completed within or stopped at 4 hours following removal from blood fridge to prevent risk of infection, as per national policy.

Disposal of blood products

All blood products should be safely disposed of into a yellow waste product bag and then put into a green topped sharps bin in the Sluice. All bags must be sealed to prevent leakage.

6. Jehovah’s witnesses

Jehovah’s witnesses will not accept a transfusion of packed red cells, platelets or components. In the emergency management of a child when there is no time to make an application to the courts and the child is likely to die or suffer serious harm without transfusion, blood or components should be given whatever the wishes of the parents. Full documentation of the decision by two senior clinicians (consultants) is essential and the trust Legal department/Duty manager must be informed.

(NUH Guideline to the management of patients refusing transfusion of blood and blood components)

7. Audit Points

• Number of transfusions given
• Number of donor exposures
• Adverse events involving blood authorisation / transfusion

8. Related Guidelines

NUH Transfusion Policy CL/CGP/008
Nottingham Neonatal Service Exchange Transfusion Guideline D18
Neonatal Haemostasis Guideline E8
Recognition and Management of Transfusion Reactions Procedure: CL/CGP/083
Sample Collection and Blood Transfusion Requesting Procedure: CL/CGP/084.
NUH Guideline to the management of patients refusing transfusion of blood and blood components
Monitoring and Management of hypotension/ Cardiovascular support in neonates, Guideline E2

2. Strauss RG. How I transfuse red blood cells and platelets to infants with the anemia and thrombocytopenia of prematurity. Transfusion. 2008 Feb;48(2):209-17


4. Ramasethu J, Luban NLC Red blood cell transfusions in the newborn. Seminars in Neonatology 1999:4; 5-16


18. Howarth et al., Red blood cell transfusion in preterm infants: current evidence and controversies, Neonatology 2018;114:7–16


---

Appendix 1  Closed Circuit Blood Transfusion System

Appendix 2  Parent Information Sheet
EQUIPMENT REQUIRED
- Blood administration set
- 50mI syringe
- 3 way tap
- Extension line with pressure dome
- Non-sterile gloves
- Blood bag and request form
- Patient's casenotes
- 2 nurses to check

METHOD

- Following checking system as per unit policy, attach 50 mI syringe to middle arm of 3 way tap
- Attach extension pressure line to right arm, and turn 3 way tap off to this line
- Turn blood administration clamp to the OFF position.
- Connect blood administration set to blood
- Attach end connection of blood administration set to left arm of 3 way tap
- Run the blood through the blood administration line, pulling back on the 50 mI syringe. The syringe should be held vertical to allow the air to gather at the top of the syringe
- When the prescribed amount of blood +5mIs to prime the line has been aspirated close the clamp on the blood administration
- Turn the 3 way tap to close the blood administration line and open the extension pressure line
- Still holding the 50 ml syringe vertical, carefully expel the air and any bubbles from the syringe, through the extension line
- The line should now be primed ready for administration, and be free from air (extra blood may be withdrawn from the blood pack to cater for any difficulties expelling the air from the syringe)
- The whole system should remain intact, while the transfusion takes place. The blood administration set must be clamped and the 3 way tap must be closed to the blood bag to ensure the baby does not receive more blood than prescribed. Leaving the blood bag attached prevents transcribing errors.
Appendix 2

A fact sheet for parents of babies receiving a blood transfusion on the Neonatal Unit

Like all medical treatments, a blood transfusion should only be used when really necessary. The decision to give a blood transfusion to your baby is made only after very careful consideration. In making that decision, your doctor will balance the risk of your baby having a blood transfusion against the risk of not having one. Doctors on the neonatal unit will be able to explain why your baby needs a blood transfusion.

Why might your baby need a blood transfusion?

Most people cope well with losing a moderate amount of blood. This lost fluid can be replaced with a salt solution. Over the next few weeks, the body will make new red blood cells to replace those lost. Medicines such as iron can also help compensate for blood loss. However, if larger amounts are lost, or if your baby is not able to make red blood cells fast enough, a blood transfusion is the best way of replacing the blood rapidly.

• Blood transfusions are given to replace blood lost in surgery.
• Blood transfusions are used to treat anaemia (lack of red blood cells) which can sometimes be the case with premature babies – the smallest premature babies will nearly always need a blood transfusion at some stage of their treatment.
• Some medical treatments or operations cannot be carried out safely without using blood.

Can I donate my blood to my baby?

This question is often asked by parents, but there are reasons why this is strongly discouraged. Firstly, there is no benefit in reducing the risk of infection, as the risk with blood from unrelated a donor provided by the National Blood Service is already very low. Secondly, there are increased risks of a number of types of transfusion reactions with blood from relatives, and it is better to avoid these.

Are transfusions safe?

Almost always, yes. The main risk from a blood transfusion is being given blood of the wrong blood group. A smaller risk is catching an infection. To ensure your baby receives the right blood, the clinical staff must make careful identification checks before any transfusion. It is important that your baby wears an identification band. If you are present, the clinical staff will ask you to state your baby’s full name and date of birth. They will then check the details on your baby’s identification band and the blood bag to make sure your baby receives the right blood.

In the United Kingdom, we take many precautions to ensure blood is as safe as possible:
• All blood donors are unpaid volunteers whose health is carefully checked.
• All donors are asked a number of questions to help us rule out anyone who may pass on an infection.
• Every donor is tested for certain infections each time they give blood.
• Any donated blood that fails these tests is discarded.
• The testing process is checked regularly to make sure it meets very high standards. The most important of these are Hepatitis B, Hepatitis C and HIV (the virus that causes AIDS). The risk of catching Hepatitis from a blood transfusion is very low – about 1 in 900,000 for Hepatitis B and less than 1 in 30 million for Hepatitis C. The chance of HIV infection is less than 1 in several million. As yet, we don’t know the level of risk of variant Creutzfeldt-Jakob disease (vCJD) being transmitted by blood. However, we have put in a number of precautions to minimise the risk.

Thanks to these key measures, blood is now safer than ever before.

Donated blood will be specially selected to match your baby’s blood for the most important blood groups. However, because red blood cells carry over 100 different blood groups, an exact match for every blood group is not possible. About 1 in every 20 adult patients makes an antibody to the donated blood and will need to have specially matched blood. This is very uncommon in infants, but if your baby has a card saying he or she needs to have special blood, please show it to your baby’s doctor and ask them to tell the hospital blood bank.

Fortunately, severe reactions to blood transfusions are extremely rare. But when they do occur, staffs are trained to recognise and deal with them.

How is blood given?

• It is dripped into a vein, usually in arm or hand, using a needle or tubing.

• In babies, a special pump is used to make sure the blood is given at the right speed.

How will my baby feel during the blood transfusion?

Most babies feel no different at all during their transfusion. However, a very small number of babies develop a slight fever, chills or a rash. These are usually due to a mild immune reaction or allergy and are easily treated with medication to reduce their temperature, or by giving the blood more slowly.

Your baby will be very carefully monitored during the transfusion, so any change in your baby’s condition will be detected very quickly.

What I have other worries about transfusion?

Please tell your doctor or nurse about any concerns you may have.

Other Information

If you have any questions you would like answered but are not covered in this leaflet, speak to the doctors on the Neonatal unit. If you are interested in finding out more about blood transfusion and have access to the Internet, you may find the following website useful: www.blood.co.uk