Policy Title: Policy for Blood Component Transfusion in Adults

Reference Number: Acute10/002

Implementation Date: This policy will be implemented after being signed off by the Chief Executive

Responsible Officer: Haemovigilance Practitioner on behalf of the Hospital Transfusion Committee

Implementation Date: February 2010

Review Date: This policy will be reviewed one year after the effective date and thereafter every two years

This policy has been developed within the context of Equality and Human Rights statutory obligations and requirements.

NB Throughout this Policy the term: -

‘Northern Sector’ denotes ‘Altnagelvin Hospital’

‘Southern Sector’ denotes ‘Tyrone County Hospital and Erne Hospital’. 
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1.0 Background to Policy
Correctly used, blood components can save lives and provide clinical benefit to many patients. However, a blood component transfusion is potentially hazardous and should only be given when the clinical benefits to the patient outweigh the potential risks.

Within the United Kingdom there is an organisation called SHOT (Serious Hazards of Transfusion) that collates and analyses data on adverse transfusion events on an annual basis. Now entering its second decade of reporting, SHOT demonstrates that the biggest risk to the patient is an incorrect blood component being transfused with human error being the main contributing factor.

The NPSA (National Patient Safety Agency) produced a safer practice notice ‘Right Patient, Right Blood’ that was endorsed in Northern Ireland by the Department of Health, Social Services and Public Safety (DHSSPS, 2007). This Safer Practice Notice was designed to improve the safety of blood transfusions and to promote strict checking procedures at each stage of the blood transfusion process. The main initiative in the Safer Practice Notice requires that staff involved in any of the processes of transfusion must successfully complete competency assessment every 3 years. The competencies are:

1. Obtaining a venous blood sample for pre-transfusion testing
2. Organising a request for a blood component for transfusion
3. Collecting a blood component for transfusion
4. Preparing and administering a transfusion of a blood component

This policy outlines the Trust’s policy on obtaining a sample for pretransfusion testing, prescribing blood components, requesting blood components from the Blood Bank; preparing and administering a transfusion, the initial management of adverse reactions and/or events and a summary on the use of blood products.

Regional (Northern Ireland Regional Blood Transfusion Policy, 2009), National and European guidelines in relation to the administration of blood components have been reviewed to prepare this policy in an effort to utilise best available evidence to ensure good clinical practice.

1.1 Key Recommendations from the NI Regional Blood Transfusion Policy

- Positive patient identification is essential at all key steps of the blood transfusion process. Positive patient identification is defined as asking the patient to state his/her first name, last name, date of birth and checking that these details correspond on the patient’s identification wristband. Where the patient is not competent or unable to specify his/her first name, last name or date of birth details on the patient’s identification wristband should be checked against a secondary source which will usually be the patient’s clinical notes or prescription sheet in the absence of a carer or relative who can verify patient identification.

- All Trusts should have a patient identification policy and the blood transfusion policy should be benchmarked against this patient identification policy.
A ‘no wristband, no transfusion’ policy is absolute, with the only exception being the patient being transfused in the community where photographic ID containing patients full name and date of birth may be used.

All Trusts will require a detailed protocol which outlines every step of the blood transfusion process and should be benchmarked against the NI Regional Blood Transfusion Policy standard.

All staff participating in the transfusion process must be appropriately trained and assessed and deemed competent to NPSA standards. These competencies are specified and are referenced National Patient Safety Agency, Safer Practice Notice 14: Right Patient Right Blood October 2006. NPSA/2006/14 www.npsa.nhs.uk/

a) Obtaining a venous blood sample for pre transfusion testing
b) Organising receipt of blood component for blood transfusion
c) Collection of a blood component for transfusion.
d) Preparing for the administering of transfusion involving a blood component.

Wherever possible, the patient should be informed of the needs for the transfusion, and consent obtained. This should be recorded in the patient’s clinical notes.

All clinical details relating to the transfusion should be documented in the patient’s clinical notes, including the decision process for the transfusion, details of the blood components transfused and the date/time each unit was administered, patient monitoring observations, the management of any adverse events and the outcome of the transfusion. It is recommended the integrated blood component prescription and transfusion record or an adaptation of this be used for this purpose.

2.0 Objectives of the Policy
This policy aims to provide guidance to all staff involved in the blood transfusion process for the safe and appropriate use of blood components within the Western Health and Social Care Trust.

3.0 Definition of Blood Component
The term ‘Blood Component’ is used throughout this policy. ‘Blood Component’ refers to:

- Red Blood Cells
- Platelets
- Fresh Frozen Plasma
- Cryoprecipitate
4.0 Definition of Responsibilities

Many groups of staff are involved in one or more aspects of blood transfusion. Some procedures are exclusively the responsibility of one staff group, others can be carried out by more than one staff group. It is important that the responsibilities of each staff group are defined and that each member of staff in that group are aware of their responsibilities and the responsibilities of others within the process.

4.1 Hospital Trust Management is responsible for the following: -

- Ensuring that there is senior management commitment to the HSS Circular 2002/009 Better Blood Transfusion (BBT2)
- Ensuring appropriate membership and function of the Hospital Transfusion Committee
- Ensuring appropriate composition and function of the Hospital Transfusion Team
- Ensuring appropriate blood transfusion policies are implemented and reviewed
- Ensuring compliance with the Blood Safety and Quality Regulations (2005)

4.2 Hospital Transfusion Committee (HTC) is responsible for the following: -

- Promoting best practice through local protocols based on national guidelines
- Leading multi-professional audit on the use of blood components within the Trust
- Auditing the practice of blood transfusion against the Northern Ireland Regional Blood Transfusion Policy, the Northern Ireland Regional Transfusion Committee (NIRTC) red cell transfusion guidelines and other relevant National guidelines
- Providing feedback on audit of transfusion practice and the use of blood components to all hospital staff involved in blood transfusion
- Promoting the education and training of all clinical, laboratory and support staff involved in clinical aspects of the blood transfusion process
- Facilitating competency based training and assessment to comply with the requirements of the NPSA Safer Practice Notice 14 'Right Patient, Right Blood' (available on Trust Intranet – click 'Training' then 'Blood Transfusion')
- Being a focus for local contingency planning for and management of blood shortages
- Reporting regularly to the NIRTC
- Participating in the activities of the NIRTC
- Consulting with local patient representatives groups where appropriate
- Contributing to the Trust Clinical Governance agenda

4.3 Hospital Transfusion Team (HTT) is responsible for the following: -

- Assisting in the implementation of the HTC's objectives
- Promoting and providing advice and support to clinical teams on the appropriate and safe use of blood
- Actively promoting the implementation of good transfusion practice
- Being a resource for training of all clinical, laboratory and support staff involved in clinical aspects of the blood transfusion process
4.4 **Haemovigilance Practitioners** are responsible for the following: -

- Ensuring quality improvements in transfusion
- Reviewing, implementing and disseminating policies and procedures pertaining to transfusion
- Minimising risk associated with transfusion
- Education and development – inducting and updating of all clinical, laboratory and support staff involved in clinical aspects of the blood transfusion process
- Facilitating competency based training and assessment to comply with the requirements of the NPSA Safer Practice Notice 14 ‘Right Patient, Right Blood’
- Assist in the investigation and reporting of transfusion reactions and other untoward incidents related to blood transfusion
- Facilitating clinical audit of transfusion practice
- Acting as a clinical specialist to advise individuals, clinical teams, patients and outside agencies

4.5 **Medical staff** are responsible for the following: -

- Assessing the patient’s blood component requirement
- Prescribing blood components stating component, quantity, duration of transfusion and any special requirements (eg CMV negative, irradiated)
- Ensuring adequate documentation of blood transfusion in the medical case notes
- Informing the patient of the indication for the blood transfusion, its risks and benefits, his/her right to refuse the transfusion and alternatives to a transfusion if available

4.6 **Medical and/or Nursing Staff** may carry out the following provided they have successfully completed the relevant training and competency assessment (NPSA Safer Practice Notice 14 ‘Right Patient, Right Blood’): -

- Obtaining samples for pretransfusion testing (Competency 1 – Obtaining a venous sample for pretransfusion Testing)
- Requesting blood components (Competency 2 – Organising a request for a blood component for transfusion)
- Collecting blood components from a Blood Bank fridge – **Northern Sector Theatre/Recovery Nursing Staff only** - (Competency 3 – Collecting a blood component for transfusion)
- Preparing the patient for a transfusion (Competency 4 – Preparing and administering a transfusion of a blood component)
- Monitoring the patient during the transfusion and carry out appropriate actions in the event of adverse reaction or event
- Reporting transfusion reactions or other incidents related to transfusion to the Blood Bank
4.7 **Biomedical Scientists** in Blood Bank are responsible for the following: -
- Ensuring labelling of request forms and blood samples comply with regionally agreed guidelines for accepting and rejecting samples for testing
- Performance of blood grouping, antibody screening and pretransfusion compatibility testing
- Checking laboratory records for historical blood group information and any special requirements flagged in patient’s laboratory record
- Ensuring blood components are issued according to recommended guidelines
- Ensuring blood components are properly labelled
- Ensuring the identification details of the patient and the blood unit to be transfused are the same on the compatibility label attached to the pack and on the blood compatibility report form
- Assisting in the investigation and reporting of transfusion reactions and other untoward incidents related to blood transfusion
- Ensuring participation in the National Blood Stocks Management Scheme to monitor blood usage and wastage
- Conducting laboratory audits

4.8 **Phlebotomists** are responsible for the following provided they have undertaken relevant formal venepuncture training and have successfully completed the relevant training and competency assessment (NPSA Safer Practice Notice 14 ‘Right Patient, Right Blood’): -
- Obtaining samples for pretransfusion testing (Competency 1 – Obtaining a venous sample for pretransfusion Testing)

4.9 **Health Care Assistants** may carry out the following provided they have undertaken relevant formal venepuncture training and have successfully completed the relevant training and competency assessment (NPSA Safer Practice Notice 14 ‘Right Patient, Right Blood’): -
- Obtaining samples for pretransfusion testing (Competency 1 – Obtaining a venous sample for pretransfusion Testing)
- Collecting blood components from a Blood Bank fridge – Southern Sector only - (Competency 3 – Collecting a blood component for transfusion)

4.10 **Operating Department Practitioners** may carry out the following provided they have successfully completed the relevant training and competency assessment (NPSA Safer Practice Notice 14 ‘Right Patient, Right Blood’): -
- Requesting blood components (Competency 2 – Organising a request for a blood component for transfusion)
- Collecting blood components from a Blood Bank fridge (Competency 3 – Collecting a blood component for transfusion)
- Preparing the patient for a transfusion (Competency 4 – Preparing and administering a transfusion of a blood component)
4.11 **Porters (Northern Sector)** are responsible for the following provided they have successfully completed the relevant training and competency assessment (NPSA Safer Practice Notice 14 ‘Right Patient, Right Blood’): -

- Collecting samples from clinical area and delivering to blood bank in an emergency situation
- Collecting blood components from the blood bank and/or satellite blood fridge and delivering them to the clinical areas and/or satellite blood fridge (Competency 3 – Collecting a blood component for transfusion)
- Returning blood components from the clinical areas and/or satellite blood fridge and ensuring their prompt return to blood bank

4.12 **Porters (Southern Sector)** may carry out the following in an emergency situation only: -

- Collect Emergency Uncrossmatched O RhD Negative Blood (Flying Squad) from the Blood Bank and deliver to the clinical area once the units have been removed and signed out by a member of staff in Blood Bank

4.13 **Support Services Assistants** (Renal Unit, Northern Sector) may carry out the following provided they have successfully completed the relevant training and competency assessment (NPSA Safer Practice Notice 14 ‘Right Patient, Right Blood’): -

- Collect blood components from the blood bank and deliver them to the Renal Unit (Competency 3 – Collecting a blood component for transfusion)
- Return blood components from the Renal Unit and ensure their prompt return to blood bank

4.14 **Theatre Orderlies** may carry out the following: -

- Receive the blood transport box from the porter at the entrance to Theatres and then immediately deliver the transport box to a qualified member of staff in the required Theatre

4.15 **Drivers** are responsible for the following: -

- Ensuring safe and timely (where possible) transportation of blood components around the province in the appropriate transport boxes

4.16 The Blood Safety and Quality Regulations (2005) requires full traceability from vein to vein, donor to patient

4.17 All staff involved in the blood transfusion process should have their knowledge on Haemovigilance issues updated annually (DoH, 2003) and be competently assessed on relevant competencies every 3 years (DoH, 2007).

4.18 All clinical aspects of the blood transfusion process should be subject to periodic audit and regular review
4.0 Decision to Transfuse

Due to increasing concerns about the safety of transfusion, the increasing complexity and cost of the production of blood components and the shortage of blood donors, there is a need for sensible guidelines for the use of blood components.

The decision to transfuse must be made by a doctor in accordance with recommended guidelines and the reason for the transfusion must be recorded in the patient’s case notes. A requirement from the HSS Circular HSC 2007/001 Better Blood Transfusion (BBT3) is to avoid the unnecessary use of blood components. Therefore Blood Bank staff will query the appropriateness of requests for transfusion against the local guidelines for use of blood components. If the reason for the transfusion is unclear, clinicians will be encouraged to contact a Consultant Haematologist to discuss the request.

It is generally considered best practice not to routinely transfuse patient’s overnight due to an increased risk of errors and difficulties in monitoring and observing the patient at night.

5.1 Use of Red Cells

Red cell transfusion is indicated to increase the oxygen carrying capacity of the blood when acute or chronic anaemia contributes to inadequate oxygen delivery to tissues. For a 70kg adult, one unit of red cells will typically raise the venous haemoglobin concentration by about 10 g/l (Handbook of Transfusion Medicine, 2007). Ensure red cells are issued in accordance with the Northern Ireland Regional Transfusion Committee (NIRTC) Red Cell Transfusion Guidelines (Appendix One).

5.2 Use of Platelets

Platelets play a primary role in the maintenance of haemostasis (i.e. the prevention of bleeding). Platelets transfusions are indicated for the prevention and treatment of haemorrhage in patients with thrombocytopenia or platelet function defects. For a 70kg adult, one adult dose of platelets will typically give an immediate rise in platelet count of 20 – 40 X 10^9 ml (Handbook of Transfusion Medicine, 2007).

5.3 Use of Fresh Frozen Plasma (FFP)

FFP is plasma that has been removed from whole blood donation and frozen within a specific time period after collection.

FFP is indicated for treatment of thrombotic thrombocytopenia and for replacement of coagulation factors in a few specific situations (Handbook of Transfusion Medicine, 2007). However, the indications for transfusing FFP are very limited and when transfused they can have unpredictable adverse effects (BCSH, 2004). For a 70kg adult, 12 – 15ml/kg (4 units) would typically increase fibrinogen levels by about 1 g/l (Handbook of Transfusion Medicine, 2007). Ensure FFP is issued in accordance with the Guidance on Use of Fresh Frozen Plasma and Cryoprecipitate (Appendix Two).
5.4 Use of Cryoprecipitate
Cryoprecipitate is produced after freezing and thawing FFP to precipitate high molecular weight proteins and should be considered to replace fibrinogen and factor VIII when the fibrinogen result is less than 1.0 g/l. Target fibrinogen level should be greater than 1.0 g/l. Recommended dose is 2 pooled bags for an average sized adult (Handbook of Transfusion Medicine, 2007). Ensure Cryoprecipitate is issued in accordance with the Guidance on Use of Fresh Frozen Plasma and Cryoprecipitate (Appendix Two).

6.0 Management of Massive Blood Loss
- Major blood loss jeopardises the survival of patients in many clinical settings and is a challenge for haematological and blood transfusion services. Fortunately acute massive blood loss is relatively uncommon. When it occurs however, early recognition with corrective action, by appropriate personnel, is vital if the patient is to survive. A named senior person should take responsibility for communication and documentation when there is a massive haemorrhage situation. Adhere to the WHSCT document ‘Guidelines on the Management of Massive Blood Loss’- available via Trust Intranet – click on ‘Guidelines, Procedures and Protocols’ then ‘Blood Transfusion Guidelines’.

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<td>There is no need for transfusion</td>
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<td>15-30% loss of blood volume (500-1500mls in an adult)</td>
<td>Replace blood volume with crystalloids or synthetic colloids, there is no need for red cell transfusion</td>
</tr>
<tr>
<td>30-40% loss of blood volume (1500-2000mls in an adult)</td>
<td>Rapid volume replacement is required with crystalloids and colloids and red cell transfusion will probably be required</td>
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<tr>
<td>&gt; 40% loss of blood volume (&gt;2000mls in an adult)</td>
<td>Rapid blood volume replacement, including red cell transfusion, is required</td>
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7.0 Obtaining a venous sample for pre transfusion testing
Staff responsible for obtaining a venous sample for pre transfusion testing must be
able to undertake venepuncture and have successfully completed Competency 1
‘Obtaining a venous sample for pre transfusion testing’.

7.1 Completion of NI Hospital Transfusion Request Form (Appendix Three)
- Information required to be completed accurately and legibly on the pre
transfusion request form: -
  - Patient Identification Number
  - Patient’s surname
  - Patient’s first name
  - Patient Postcode
  - Date of Birth
  - Gender
  - Consultant
  - Hospital
  - Location of patient at time of request
  - Transfusion History (ask patient/check medical casenotes/check laboratory
    system)
  - Obstetric History
  - Whether the sample is for Group and Screen or Group and Cross Match
  - Date and time sample taken
  - Printed name and signature of staff member who took the sample
    (confirming that the patient identification details correspond to the details
    of the patient, the request form and the sample tube)
- If a Group and Cross Match is required the following information is also
required: -
  - Number of units, time and date required (if it is an emergency please
follow up with a phone call to Blood Bank)
  - Where blood is ordered for surgery the Maximum Surgical Blood Order
Schedule (MSBOS) (see Appendix Four) should be adhered to. MSBOS
is a schedule for the maximum provision of red blood cells for common
operations requiring intraoperative blood transfusion and helps to improve
stock management and wastage. However this does not preclude further
blood being requested in response to a specific clinical need
  - Any special requirements (e.g. CMV negative, irradiated) (see Appendix
Five)
  - Where blood must be sent
  - Indication for red cell transfusion
  - Date and result of most recent Haemoglobin result
  - Printed name and signature of staff member requesting the blood
component
- Addressograph labels may be used on the pre transfusion request form
- If the pre transfusion request form is not completed accurately, the sample will
be rejected by Blood Bank
- Staff in Blood Bank have the discretion to request the clinician to discuss
blood component requirements with a Consultant Haematologist prior to
issue.
7.2 Obtaining the venous sample

- Positively identify the patient (who is capable of giving an accurate and reliable response) by:
  - Asking the patient for their first name, surname and date of birth
  - Confirming that these details match those on the patient’s identification wristband
  - Confirming that the first name, surname, date of birth and patient’s identification number on the patient’s identification wristband corresponds with details on the pre transfusion request form

- For the patient unable to give an accurate and reliable response:
  - The patient’s first name, surname and date of birth and patient’s identification number must be identical to those on the patient’s identification wristband, case notes and the pre transfusion request form
  - Where possible confirm patient identity with another member of staff and/or patient’s carer or relative who can verify patient identification

- For the unidentified patient:
  - The patient identification number and gender are the minimum patient identifiers
  - The patient identification number and gender must be identical to those on the patient’s identification wristband and the pre transfusion request form
  - Blood Bank must be informed at the earliest opportunity when the patient identification details become available

- Use a 6 ml EDTA blood transfusion tube
- Handwrite the sample tube at the patient’s bedside immediately after taking the sample
- Label the sample tube with the patient’s first name, surname, date of birth, patient identification number, then sign and date
- Make a final check that the details on the patient’s identification wristband correspond with the pre transfusion request form and the sample tube
- Print name, sign, date and time the request form
- Record in the patient’s case notes why, when and who took the sample
- Take the sample to a designated collection point in the clinical area. If using a vacuum tube system, ensure you are correctly trained to use the system

7.3 Important points relating to obtaining a sample for pre-transfusion testing

- All inpatients, outpatients, patients attending the A&E department and day-case patients must wear a patient’s identification wristband when they require a sample to be taken for pretransfusion testing
- Only one patient must be bled at a time by a member of staff in a continuous uninterrupted process to minimise the risk of sample error
- Samples for pretransfusion testing should not be taken from the arm that has an infusion in progress - this may result in a diluted sample being sent for testing or a spurious laboratory result being obtained
- Venflons should not be used for taking samples for pretransfusion testing
- Sample tube should be correctly filled
- Sample tubes must not be pre-labelled
- All details must be handwritten legibly on the sample tube – addressograph labels must not be used on the sample tube
The sample tube must be handwritten by the person taking the sample immediately after the sample has been taken and at the patient’s bedside. It is essential to spell the patient’s name correctly and consistently. Avoid using roller ball or fountain pen when recording details on sample tube. After the sample is taken, the blood should be mixed gently in the tube. If a patient poses a potential infection risk e.g. Category 3 status, their samples should be labelled accordingly. In an emergency situation, samples should be hand delivered to the Blood Bank and the staff member taking the sample should be aware of the urgency of the situation. Blood Bank must be contacted to alert them of the emergency. Samples that will be rejected – under-filled samples; haemolysed samples; inadequately/incorrectly labelled samples.

7.4 **Telephone Requests**

When sending follow up request forms for blood components please complete patient demographic details and the ‘Product Request’ section on the NI Hospital Transfusion Request Form and sign the bottom of the request form.

**Northern Sector**

- A written record is kept in Blood Bank of all telephone requests including the identity of the person making the request and the person receiving the telephone request.
- The following information must be provided:
  - Patient’s surname, first name and patient identification number
  - Location of patient
  - Number and type of blood component required including any special requirements
  - The reason for the request
  - The date and time the blood component is required
- When blood components have been requested from Blood Bank, it must be documented in the patient’s case notes to avoid duplication of request.

**Southern Sector**

- When requesting blood for crossmatch in the routine day by telephone (Monday to Friday 9a.m. – 5p.m. excluding Bank Holidays), a completed request form must to sent to Blood Bank.
- In emergency situations Blood Bank staff will record the following details:
  - Date and Time of Request
  - Full name
  - Hospital Number
  - Date of Birth
  - Ward
  - Name of person making request
  - Component required and quantity
  - Time required
  - Name of Blood Bank staff taking request
  - Any other special requirements
- Where possible a follow up request form should be sent.
7.5 Compatibility Testing

Group and Screen (or ‘Group and Hold’ or ‘Group and Save’)

- The patient’s blood sample is tested to determine the ABO and RhD type and to detect red cell antibodies in addition to anti A or anti B that could haemolyse transfused red cells.
- This procedure takes approximately 25 minutes to perform following receipt of a correctly labelled sample.

Group and Cross-Match

- The patient’s blood is tested to determine the ABO and RhD type, to detect red cell antibodies that could haemolyse transfused red cells and to confirm compatibility with each of the units of red cells to be transfused.
- This procedure takes approximately 40 minutes to perform following receipt of a correctly labelled sample - this will be longer if the patient has antibodies.

7.6 Patient with antibodies

- If, during antibody screening, a patient is found to have antibodies present, a process of antibody identification will be carried out.
- Further samples might be required to be sent to the Northern Ireland Blood Transfusion Service (NIBTS).
- Blood Bank should be informed of patients with known antibodies who are going to theatre, even if the usual MSBOS is group and save only.
- The Blood Bank staff will advise on the availability / time required to provide compatible blood should it be required.

7.7 Timing of Sample Collection In Relation To Previous Transfusions

- Blood samples will be retained in the Blood Bank for 7 days.
- A cross match can be performed on a sample up to 5 days old if the patient has not been recently transfused.
- Cross matched blood will be ‘reserved’ for 72 hours.
- Transfusion or pregnancy may cause a primary or secondary immune response and samples selected for cross matching or antibody screening must take account of this, so that newly developed antibodies are detected.
- When a patient is being repeatedly transfused, it is not necessary to submit a daily cross match sample. Such patients should be screened for the development of irregular antibodies at least every 72 hours (3 days).
- If a transfusion has been given more than 72 hours previously, a new sample is required according to the following guidance (SNBTS, 2004):

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<thead>
<tr>
<th>Patient transfused within:</th>
<th>Sample to be taken (maximum)</th>
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<tbody>
<tr>
<td>3 to 14 days</td>
<td>24 hours before transfusion</td>
</tr>
<tr>
<td>14 to 28 days</td>
<td>72 hours before transfusion</td>
</tr>
<tr>
<td>28 days to 3 months</td>
<td>1 week before transfusion</td>
</tr>
</tbody>
</table>
8.0 Issuing Group Specific Blood
When the situation warrants immediate action, and the risk of not transfusing outweighs the risk of waiting for a crossmatch, provided the Blood Bank have a suitable accurately labelled sample available, blood of the patient’s ABO and Rh type can be provided in 15 minutes.

9.0 Use of Emergency Uncrossmatched O RhD Negative Blood (Flying Squad) – (see section 24.0, page 32 for additional information)
- Used only in an emergency situation when there is insufficient time for the blood bank to issue ‘Group Specific’ blood
- Is available in the Satellite Blood Fridge, Recovery Area, Main Theatres (Altangelvin); Blood Bank Issue Fridge (Erne) and Blood Bank Issue Fridge (Tyrone County)
- Inform the Blood Bank when the uncrossmatched O RhD negative blood has been used in order to ensure replacement of units used

10.0 Prescribing Blood Components
- Prescription of blood components is the sole responsibility of medical staff
- Before any blood component is administered, the reason for transfusion, the type of blood component to be given and the prescriber’s signature must be recorded in the patient’s case notes
- Blood components must be prescribed on a fluid balance chart or blood prescription chart. This policy recommends the use of the ‘Blood Component Prescription and Transfusion Record’ (available via Trust Intranet, Click on ‘Guidelines, procedures & protocols’ and ‘Blood Transfusion Guidelines’) – which will supersede the prescription sheet and blood observations chart
- The prescription sheet must contain date, patient’s surname, first name, date of birth, gender and patient identification number
- The prescription must state the blood component to be administered, quantity to be given and duration of the transfusion
- The transfusion of blood must be complete within 4 hours of removal from controlled temperature storage. A red cell transfusion in this Trust should be prescribed over a clearly stated time period that lies between 1 ½ to 3 hours. An infusion rate of 3 hours is appropriate in frail elderly patients at risk of circulatory overload.
- Any special instructions e.g. any medication required before or during the transfusion must be indicated on the patient’s medicine kardex
- Any special requirements e.g. gamma irradiated, CMV-antibody-negative should be indicated on the prescription sheet
- The prescription should be signed by the member of medical staff
11.0 Consent to Transfusion

- Although gaining written consent for transfusion of blood components is not a legal requirement in the United Kingdom, there is a responsibility to ensure that the patient receives adequate information regarding the transfusion.
- Where possible, the patient must receive timely information in relation to the indication for the transfusion, the risks and benefits of the transfusion and any alternatives available (HSS Circular 2002/009 Better Blood Transfusion, BBT2). This should be recorded in the Blood Component Prescription and Transfusion Record or the patient’s clinical notes.
- Provide a patient information booklet - available via Trust Intranet – click on ‘Useful Documents’ and booklet available under ‘B’
- For patients who are not willing to consent to transfusion, such as Jehovah’s Witnesses, adhere to the WHSCT Policy ‘Treatment of Patient’s who decline transfusion of Blood Components and/or Blood Products’ – available via Trust Intranet – click on ‘Guidelines, Procedures and Protocols’ then ‘Blood Transfusion Guidelines’.
- The beliefs of Jehovah’s Witnesses and any other patients resistant to transfusion should be acknowledged and respected
- Consent issues should not delay necessary transfusion in an emergency situation

12.0 Organising a request for a Blood Component for transfusion

Staff responsible for organising a request for a Blood Component for transfusion must have successfully completed Competency 2 ‘Organising a request for a Blood Component for transfusion’.

- Only one unit of blood should be removed at a time for each patient unless extremely rapid transfusion of large quantities of blood is required
- Prior to organising a request for a Blood Component for transfusion ensure that:
  - The blood component is ready for collection
  - The blood component has been properly prescribed and the reason for the transfusion is recorded in the patient’s case notes
  - The patient has a patient identification wristband in situ
  - The patient has baseline observations (temperature, pulse, respirations and blood pressure) taken and recorded
  - The patient has patent venous access
- Complete a Blood Collection Form (Appendix Six)
- Information required to be completed accurately and legibly on the Blood Collection Form:
  - Patient Identification Number
  - Patient’s surname
  - Patient’s first name
  - Date of Birth
  - Gender
  - Clinical Area
  - Consultant
  - Blood component required (indicating any special requirements)
  - Details of individual completing the form
Positive identification of the patient (who is capable of giving an accurate and reliable response) is essential before the blood collection form is used and must be based on the following:

- Ask the patient for their first name, surname and date of birth
- Confirm that these details match those on the patient’s identification wristband
- Confirm that the first name, surname, date of birth and patient’s identification number on the patient’s identification wristband corresponds with details on the blood collection form

For the patient unable to give an accurate and reliable response:

- The patient’s first name, surname and date of birth and patient’s identification number must be identical to those on the patient’s identification wristband, case notes and the blood collection form
- Where possible confirm patient identity with another member of staff and/or patient’s carer or relative who can verify patient identification

For the unidentified patient:

- The patient identification number and gender are the minimum patient identifiers
- The patient identification number and gender must be identical to those on the patient’s identification wristband and the blood collection form

Identify an appropriate member of staff to collect the blood component - Northern Sector – Porters; Southern Sector - Nursing Staff or Health Care Assistants

Northern Sector

- Ensure completed Blood Collection Form delivered to relevant area (Appendix Six)
- Ensure the member of staff is aware of the exact location of the fridge where the blood component is being stored
- In the event of failure of the vacuum shute system and a blood component is required in an emergency situation:
  - Phone Blood Bank (9a.m. to 5p.m. Monday to Friday; or bleep BMS oncall out of hours)
  - Inform member of staff in Blood Bank of the patient identification details
  - Porters should be informed to collect blood component from the Blood Bank
  - The completed blood collection form should be forwarded to the Blood Bank when the vacuum shute system is back in operation and marked ‘Already collected’

Southern Sector

- Provide the individual with the completed Blood Collection Form that has been checked with patient as above
- Ensure the member of staff is aware of the exact location of the fridge where the blood component is being stored
- Ensure that staff member aware of location of key for Blood Bank out of hours.
13.0 Collection of Blood Components from the Blood Bank / Satellite Blood Fridge

- Staff responsible for collection of blood components must have successfully completed Competency 3 ‘Collecting a blood component for transfusion’.
- An accurately completed Blood Collection Form must be taken by the staff member collecting the blood component from the Blood Bank / Satellite Blood Fridge unless the Emergency Uncrossmatched O RhD Negative Blood (Flying Squad) is required.
- If there are multiple blood components for the same patient in the fridge, the staff member collecting the blood component should select the blood component that contains the ‘Compatibility Report’.
- Only one unit should be removed for a patient at a time. (Exception may be for theatre patients or in an extreme emergency when a rapid transfusion is needed – in which case a validated transport box must be used.) In this situation, one Blood Collection Form would suffice.
- Blood is never stored in a ward or drugs refrigerator and must only be transported in boxes designed for the purpose.

NORTHERN SECTOR – ALTNAGELVIN HOSPITAL

Monday to Friday (9a.m. to 5p.m.), Biomedical Scientists (BMS) inform porters that blood component required in clinical area. The BMS ensures correct component is removed and the porter completes ‘Unit removed from Blood Bank Lab by’ section of the Blood Traceability Record.

13.1 Removal of Blood Component (Red Cells or Fresh Frozen Plasma) from Blood Bank Fridge

- Select and remove a unit to match the patient details that are on the Blood Collection Form
- The patient details of the Unit and the Blood Collection Form are checked against each other (full name, date of birth and patient identification number).
- Ensure correct component being removed as indicated on the Blood Collection Form
- A blood compatibility report will be available to take also if this is the first unit of blood to be taken
- Check that the blood group and unit number on the compatibility label attached to the pack corresponds with those on the compatibility report (if available) and the Blood Traceability Record (Appendix Seven)
- Remove a cool pack
- Sign and record date and time the ‘Unit removed from Blood Bank Lab by’ section of the Blood Traceability Record
- Replace the Blood Traceability Record in the clear bag along with the unit of blood
- Identify the correct patient details on the A3 Blood Issue sheet beside the Blood Bank fridge and record date and time out and initial appropriate section against the corresponding unit number
- Place the Unit in the Blue Blood Porter bag and place a cool pack on top of the unit (if more than two units being selected use the 4 or 6 unit boxes as appropriate. The blood transfer box should have the least air possible - ie fill all residual space with cool packs)
• Close the lid on the Blue Blood Porter bag
• Place the Blood Collection Form in the designated folder beside the Blood Bank fridge
• Porter will take immediately to the requesting correct clinical area and hand over the blue blood porter bag to a qualified member of staff (or in theatres to appropriate member of staff)
• Blood components must never be left unattended

13.2 Removal of Blood Component (Red Cells or Fresh Frozen Plasma) from Satellite Blood Fridge
• To access the Satellite Blood Fridge 8p.m. – 8a.m., Bleep Theatre Nurse 8211
• Select and remove a unit to match the patient details that are on the Blood Collection Form
• The patient details of the Unit and the Blood Collection Form are checked against each other (full name, date of birth and patient identification number)
• A blood compatibility report will be available to take also if this is the first unit of blood to be taken
• Check that the blood group and unit number on the compatibility label attached to the pack corresponds with those on the compatibility report (if available) and the Blood Traceability Record
• Remove a cool pack
• Sign and record date and time out on the stamper on the back of the Blood Traceability Record
• Replace the Blood Traceability Record in the clear bag along with the unit of blood
• Place the Unit in the Blue Blood Porter bag and place a cool pack on top of the unit (if more than two units being selected use the 4 or 6 unit boxes as appropriate. The blood transfer box should have the least air possible (ie fill all residual space with cool packs)
• Close the lid on the Blue Blood Porter bag
• Place the Blood Collection Form in the designated folder on top of the fridge
• Porter will take immediately to the requesting correct clinical area and hand over the blue blood porter bag to a qualified member of staff
• Nurse in theatres will take the unit to the relevant theatre suite
• Blood components are never left unattended

13.3 Removal of Emergency Uncrossmatched O RhD Negative Blood (Flying Squad)
• Select & remove the required unit(s) of blood from the fridge
• Remove a cool pack
• Sign and record date and time out on the back of the Blood Traceability Record.
• Replace the Blood Traceability Record in the clear bag along with the unit of blood.
• Repeat this procedure with each unit if more than one unit removed.
• Sign, date and record location in appropriate section of White Folder on top of Satellite Blood Fridge and record time out and initial appropriate section.
• Place the Unit(s) in the Blue Blood Porter bag and place a cool pack on top of the unit (if more than two units being selected use the 4 or 6 unit boxes as appropriate. The blood transfer box should have the least air possible - ie fill all residual space with cool packs).
• Close the lid on the Blue Blood Porter bag.
• Porter will take immediately to the requesting correct clinical area and hand over the blue blood porter bag to a qualified member of staff
• Nurse in theatres will take the unit to the relevant theatre suite
• Blood components are never left unattended
• Inform Blood Bank that units have been removed (out of hours - bleep on call Biomedical Scientist in Haematology)

13.4 **Delivery of blood from Blood Bank Fridge to Satellite Blood Fridge**
- To access the Satellite Blood Fridge 8p.m. – 8a.m., Bleep Theatre Nurse 8211
- Clinicians/nursing staff contact blood bank to inform them of blood to be transferred to Satellite Blood Fridge
- Portering staff deliver blood components (that have been appropriately packed by blood bank staff) from blood bank to theatre nurse at Satellite Blood Fridge
- Theatre Nurse ‘stamps’ the back of the Blood Traceability Record for each unit received and records signature, date and time in for each unit placed in the Satellite Blood Fridge
- Replace the Blood Traceability Record in the clear bag along with the unit of blood
- Place unit and cool packs in Satellite Blood Fridge
- Transport box placed on hooks near Satellite Blood Fridge for future use

**SOUTHERN SECTOR – TYRONE COUNTY HOSPITAL**
13.5 **Removal of Blood Component (Red Cells or Fresh Frozen Plasma) from Blood Bank Fridge**
- Select and remove a unit to match the patient details that are on the Blood Collection Form
- The patient details of the Unit and the Blood Collection Form are checked against each other (full name, date of birth and patient identification number)
- Ensure correct component being removed as indicated on the Blood Collection Form
- A blood compatibility report will be available to take also if this is the first unit of blood to be taken
- Check that the blood group and unit number on the compatibility label attached to the pack corresponds with those on the compatibility report (if available) and the Blood Traceability Record
- Sign and record date and time out on the stamper on the back of the Blood Traceability Record
- Replace the Blood Traceability Record in the clear bag along with the unit of blood
- Record unit number in appropriate section of the register beside Blood Bank fridge against correct patient details and record date and time out and initial appropriate section
• Place the Blood Collection Form in the tray labelled “FAO LABORATORY STAFF”
• Staff member will take immediately to the requesting correct clinical area and hand over the blood component to a qualified member of staff
• Blood components are never left unattended

13.6 Removal of Emergency Uncrossmatched O RhD Negative Blood (Flying Squad)
• Contact Haematology/Blood Bank at all times when the emergency stock “O Negative” is being used. Contact must be made with a member of the BMS staff, giving your name and staff group:
  - Monday – Friday 9a.m. to 5p.m. telephone Ext 3142
  - Out of hours, weekends and Bank Holidays contact the on call staff via switchboard Erne Ext 2000
• You will be asked how many units you require and how many more you are likely to need
• Out of hours inform the “Nurse Manager” on call for TCH the emergency stock O negative is being used
• The Nurse Manager on call is responsible for replenishing the “Emergency Stock O Negative” (from 5p.m. to 9a.m., weekends and Bank Holidays)
• On arrival at the Blood Bank Fridge select the number of red and white boxes required (each box contains 2 units of blood) – each box labelled 1, 2 or 3
• Locate the pink collection register sheet with the number corresponding to the number on the box – 1, 2, or 3
• Complete the pink register sheet for each unit on the sheet
• The Blood Traceability Record (Appendix Seven) is located in the pocket on the outside of the transport box
• Sign, date and time the Blood Traceability Record in the section ‘Unit removed from Blood Bank by:’
• Place Blood Traceability Record back into the pocket of the transport box
• Do not open the transport box to check the units
• Staff member will take immediately to the requesting correct clinical area and hand over to a qualified member of staff
• Once the transport box has been opened, the 30 minute rule will apply
• Complete the patient details on the Blood Traceability Record and return to Blood Bank as soon as possible

SOUTHERN SECTOR – ERNE HOSPITAL
13.7 Removal of Blood Component (Red Cells or Fresh Frozen Plasma) from Blood Bank Fridge
• Select and remove a unit to match the patient details that are on the Blood Collection Form
• The patient details of the Unit and the Blood Collection Form are checked against each other (full name, date of birth and patient identification number).
• Ensure correct component being removed as indicated on the Blood Collection Form
• A blood compatibility report will be available to take with the first unit of blood
• Check that the compatibility label attached to the unit pack matches the unit number on the component pack (NIBTS label)
• Check that the blood group and unit number on the compatibility label attached to the pack corresponds with those on the compatibility report (available if first unit being removed) and the Blood Traceability Record (Appendix Seven)
• Identify the correct patient details on the A3 register and record unit number, date, time out and signature in the appropriate section
• Sign and record date and time the ‘Unit removed from Blood Bank Lab by’ section of the Blood Traceability Record
• Place the Blood Traceability Record back in the clear bag along with the blood component
• Leave Blood Collection Form in tray labelled ‘Blood Collection Forms’
• Staff member will take immediately to the requesting correct clinical area and hand over to a qualified member of staff
• Blood components are never left unattended

13.8 Removal of Emergency Uncrossmatched O RhD Negative Blood (Flying Squad)
• Contact Blood Bank at all times when the emergency stock “O Negative” is being used. Contact must be made with a member of the BMS staff, giving your name and staff group
  - Monday – Friday 9a.m. to 5p.m. telephone Ext 2361
  - Out of hours, weekends and Bank Holidays contact the on call staff via switchboard Erne Ext 2000
• Emergency O negative blood is located in a Red and White Box on the bottom shelf of the blood issue fridge – the box contains 2 units of uncrossmatched O negative blood
• The Blood Traceability Record (Appendix Seven) is located in the pocket on the outside of the transport box
• Sign, date and time the Blood Traceability Record in the section ‘Unit removed from Blood Bank by:’
• Place Blood Traceability Record back into the pocket of the transport box
• Do not open the transport box to check the units
• Complete the pink register sheet
• Staff member will take immediately to the requesting correct clinical area and hand over to a qualified member of staff
• Once the transport box has been opened, the 30 minute rule will apply
• Complete the patient details on the Blood Traceability Record and return to Blood Bank as soon as possible

14.0 Return of unused Units
14.1 Red Cells
• If a unit of blood is not going to be used, it should be promptly returned (within 30 minutes) to the Blood Bank Fridge / Satellite Blood Fridge. Once out of the cold chain, red cells will slowly warm to an ambient temperature increasing the risk of bacterial proliferation and breakdown of red cells.
• Place cool pack in fridge (where applicable)
• If the unit of blood is returned to the fridge within 30 minutes of removal the unit should be placed back in its original position in the fridge and can be used at a later time.
• **Altnagelvin Blood Fridge & Out of Hours Fridge & Erne Blood Fridge** – Sign, date and time against the unit returned on the register sheet

• **Tyrone County & Satellite Blood Fridge only** – Sign, date and time the stamper on the back of the Blood Traceability Record

• If concerned / unsure of what to do or if the blood has been out of the blood bank for more than 30 minutes, seek advice from a member of the Blood Bank staff (out of hours bleep on call Biomedical Scientist in Haematology)

14.2 **Platelets/Fresh Frozen Plasma/Cryoprecipitate**

• If a unit of Platelets/Fresh Frozen Plasma/Cryoprecipitate is not going to be used in the clinical area, it should be promptly returned to the Blood Bank and a member of Blood Bank staff should be informed so as to advise if the unit is to be available for re-issue or for disposal.

15.0 **Receipt of blood component in clinical area**

• Qualified member of staff confirms that correct component for correct patient is delivered against appropriate documentation

• Complete relevant section ‘Unit received on Clinical Area by:’ on Blood Traceability record – print name, date and time received

16.0 **Suitable locations for storage of Blood Components**

• Red blood cells must only be stored in temperature controlled blood refrigerators certified for use - not in clinical or other domestic refrigerators

• Red blood cells may be transported in boxes that are designated for this purpose and have being validated locally.

• Platelet function is best maintained by storage at 22°C with agitation (Handbook Of Transfusion Medicine, 2007). Platelets are NEVER stored in a blood fridge.

• A thawed unit of Fresh Frozen Plasma can be stored for up to 24 hours in a temperature controlled fridge (Handbook of Transfusion Medicine, 2007)
17.0 Pre Transfusion Identification Checks
Staff responsible for preparing and administering a transfusion of a blood component must have successfully completed Competency 4 ‘Preparing and administering a transfusion of a blood component’.

Note the compatibility form and patient’s case notes play no part in the pre transfusion patient identification checks

If you are interrupted or distracted at any stage during the checking procedure you should start again.

- Two members of staff are required to perform the pre transfusion identification check. These are double independent checks. Staff performing this task must have achieved Competency 4 ‘Preparing and administering a transfusion of a blood component’. Both members of staff will perform the checks separately and independently and agree the result.

- The bedside check must include the following and must not be carried out away from the patient: -
  - Confirm that the blood component has not passed its expiry date and that it will not expire during the transfusion episode (midnight of the expiry date as stated on the blood component)
  - Check blood component for signs of discolouration, haemolysis or leaks

- Positive identification of the patient (who is capable of giving an accurate and reliable response) is essential and must be based on the following: -
  - Ask the patient for their first name, surname and date of birth
  - Confirm that these details match those on the patient’s identification wristband
  - Confirm that the first name, surname, date of birth and patient’s identification number on the patient’s identification wristband corresponds with details on the prescription chart and the compatibility label attached to the blood pack

- For the patient unable to give an accurate and reliable response: -
  - The patient’s first name, surname and date of birth and patient’s identification number must be identical to those on the patient’s identification wristband, case notes, the prescription chart and the compatibility label attached to the blood pack
  - Where possible confirm patient identity with another member of staff and/or patient’s carer or relative who can verify patient identification

- For the unidentified patient: -
  - The patient identification number and gender are the minimum patient identifiers
  - The patient identification number and gender must be identical to those on the patient’s identification wristband, the prescription chart and the compatibility label attached to the blood pack

- Confirm that the blood group and unit number on the blood component label details, attached by the Transfusion Service, corresponds with the blood component compatibility label attached by the blood bank

- All documentation pertaining to the blood transfusion episode must be matching before staff complete signatures
• Check any special requirements contained in the prescription sheet correspond with special requirements indicated on the blood component compatibility label attached by the Transfusion Service

• The compatibility report form will be used as part of the Blood Component checking procedure (as this should include and specify any special requirements) and then completed with the following details - date, start time and signature of the two members of staff undertaking the check

• Blood Traceability Record documentation should be completed (print name, date and time when transfusion commenced) and returned to blood bank as soon as possible after the commencement of the transfusion.

• If there are any discrepancies found during the course of the bedside check, the blood component should not be transfused and advice must be sought from the Blood Bank.

• If no discrepancies are found during the above procedures, the blood component can be erected. This must be done by one of the staff members involved in the above pre transfusion checking procedure.

• The compatibility report form must be readily available during the transfusion episode. When the transfusion of the component is completed the report must be kept in the patient's medical notes as a permanent record of the transfusion. This policy recommends that the compatibility report form is attached to the relevant section of the ‘Blood Component Prescription and Transfusion Record’

18.0 Observations during transfusion of a Blood Component

• This policy recommends the use of the ‘Blood Component Prescription and Transfusion Record’

• The following observations are the minimum acceptable standard to be undertaken and recorded for the transfusion of each blood component: -
  - Pulse, blood pressure, temperature and respirations before the commencement of the transfusion
  - Pulse, blood pressure, temperature and respirations 15 minutes after the commencement of the transfusion
  - Pulse, blood pressure, temperature and respirations at the end of the transfusion

• Further observations are at the discretion of the clinical area (dependent on clinical condition, level of consciousness, inability to communicate adverse effects)

• These observations must be repeated for each blood component transfused

• Visual observation of the patient throughout the transfusion is essential

• A doctor and/or qualified nurse is responsible for informing the patient about possible adverse effects of transfusion and the importance of reporting immediately any adverse effects. Adverse effects include:
  - Pyrexia - Headache
  - Shivering - Chest tightness
  - Rash - Hypotension
  - Flushing - Anxiety/restlessness
  - Shortness of breath - Pain in the extremities or in the loin
  - Tachycardia
19.0 Administration of a Blood Component

- Red cells and Fresh Frozen Plasma (FFP) must be transfused through a sterile blood administration giving set (incorporates a mesh filter 170-200 micron pore size). A standard blood or platelet administration set must be used for the transfusion of platelet components. Platelets must not be transfused through giving sets that have been used for blood or plasma components.

- Prior to the commencement of the blood component transfusion EITHER – prime the blood administration set with an intravenous infusion of 0.9% sodium chloride (if this is required it must be prescribed by the doctor and be checked according to the Trust intravenous fluid policy) OR flush the venous access with 5 to 10mls of 0.9% sodium chloride.

- 0.9% Sodium Chloride is the only solution that should be infused through the blood administration set prior to the transfusion of a blood component.

- The start and finish times of the transfusion episode must be clearly recorded on the observation chart.

- It is imperative that all paperwork pertaining to the transfusion episode is checked and completed accurately.

19.1 Additional Information regarding Platelet Transfusion

- Platelets must never be stored in a refrigerator.

- Platelets are continually agitated whilst in Blood Bank (to prevent them aggregating) therefore on arrival at the clinical area they should be given as soon as possible.

- A sterile platelet administration giving set should be used. If this is not available a sterile blood administration giving set may be used, provided it has not previously been used for the administration of red blood cells.

- Maximum infusion time 30 minutes.

19.2 Additional Information regarding Fresh Frozen Plasma (FFP) Transfusion

- Take baseline coagulation screen before FFP is transfused (though may need to use FFP before results are available)

- Requires approximately 30 minutes thawing time in Blood Bank from request received in Blood Bank

- FFP must be transfused through a sterile blood administration giving set

- Start infusion immediately upon arrival to the clinical area

- Maximum infusion time 30 minutes

- Must be transfused within 4 hours of being thawed if stored at room temperature

- FFP can be kept in a temperature controlled fridge for up to 24 hours at 4°C after thawing (although post thaw storage results in decline in content of coagulation factors)

- If not transfused within 4 hours of being thawed, please contact Blood Bank for advice
19.3 Additional Information regarding Cryoprecipitate Transfusion

- Requires approximately 30 minutes thawing time in Blood Bank from time of request
- Cryoprecipitate must be transfused through a sterile blood administration giving set
- Start infusion immediately upon arrival to the clinical area
- Maximum infusion time 30 minutes
- Must be infused within 4 hours of being thawed if stored at room temperature
- Must be stored in ambient temperature after thawing (ie never place into a fridge after thawing)

20.0 Technical Aspects in the Administration of a Blood Component

- Transfusion of red cells should commence within 30 minutes of removal from controlled cold chain storage and must be completed within 4 hours of removal from controlled cold chain storage.
- If a transfusion of red cells has to be disconnected temporarily eg problem with venous access, the blood administration giving set must be replaced prior to recommencing the transfusion using an Aseptic Non Touch Technique (ANTT). The transfusion must be completed within 4 hours of removal from controlled cold chain storage. If this is not possible, the red cells remaining in the pack after the 4-hour period should be discarded as per section 21.0.
- If a patient has to be transferred to another ward within the same hospital:
  - The patient should be stable from the blood transfusion perspective
  - Do not stop the transfusion for the purpose of the transfer
  - Do not transfer the patient until after the first 15 minutes of the transfusion
  - Ensure the patient is escorted by a qualified member of staff
- There is extensive clinical experience of safely administering red cell units to stable patients over a period of 90 minutes for each unit (Handbook of Transfusion Medicine, 2007). In situations such as massive haemorrhage where rapid red cell replacement is required a unit may be transfused in under 5 minutes using rapid infuser devices.
- Electronic infusion pumps may damage red blood cells, and must only be used for the administration of red blood cells if there is manufacturer verification that they are safe to use for this purpose (Appendix Eight). The administration set used must be suitable for the administration of blood components and is recommended for the type of infusion pump that is being used.
- There is no minimum or maximum size of cannula for transfusion. The size of the cannula chosen should depend on the size of the vein and the speed at which the blood component is to be transfused. For patients with short-term or indwelling multi-lumen central lines, these are usually suitable for the transfusion of blood components. Where possible, one lumen should be reserved for administering blood components (Handbook of Transfusion Medicine, 2007).
- Red blood cells are not routinely warmed. Patients who will benefit from warmed blood include adults and children receiving massive transfusion, infants requiring exchange transfusion and patients with clinically significant cold agglutinins (BCSH, 1999). Red blood cells must only be warmed using a
specifically designed commercial device with a visible thermometer and audible warning.

- Red blood cells for transfusion must be stored in a validated designated alarmed blood fridge at a stable temperature 2-6°C. Red blood cells throughout its transportation and storage should be maintained at 2-6°C using validated “cool boxes” which are required to maintain the “cold chain”. If a unit of red blood cells has been out of temperature control for more than 30 minutes and there is no prospect of its imminent transfusion the unit must be returned to blood bank and blood bank informed of this.
- Drugs must not be added to blood components under any circumstance.
- A new giving set must be used:
  - after 12 hours of continuous transfusion in order to prevent bacterial growth
  - if another infusion is to continue after the transfusion.

21.0 Completing the Transfusion of a Blood Component

- Undertake and record pulse, blood pressure, temperature and respirations at the end of the transfusion.
- Record the time of completion on the ‘Blood Component Prescription and Transfusion Record’
- Discard the giving set according to the hospital policy for disposing of clinical waste. Insert the blue plug to the port where the blood administration set was inserted.
- At the end of the transfusion, EITHER – prime the blood administration set with an intravenous infusion of 0.9% sodium chloride (if this is required it must be prescribed by the doctor and be checked according to the Trust intravenous fluid policy) OR flush the venous access with 5 to 10mls of 0.9% sodium chloride.
- Northern Sector – Empty blood component bags must be kept at ward level in the designated bag (with appropriate details recorded on bag) and placed on hooks in the sluice room for 48 hours. Clinical staff must then ensure that the empty blood component bag is discarded in a yellow lid burn bin box 48 hours after the transfusion.
- Northern Sector - Where a blood component has been partially transfused for reasons other than a suspected reaction to the transfusion, the unit bag, the remaining contents and the giving set that has had an appropriate stopper attached should be placed in the designated bag (with appropriate details recorded on bag) and placed on hooks in the sluice room for 48 hours. Clinical staff must then ensure that the partially used blood component bag is discarded in a yellow lid burn bin box 48 hours after the transfusion.
- Southern Sector – Empty and partially used blood component bags must be returned to the hospital blood bank along with the completed Blood Traceability Record.
- Any unused blood components must be returned to the blood bank as soon as possible.
- If the transfusion runs over its prescribed time the doctor must be informed.
- All paperwork involved (Blood Component Prescription and Transfusion Record and Compatibility Report Form) must be filed in the patient’s notes.
22.0 Managing and reporting of Adverse Reactions/Events

- Management of an Acute Transfusion Reaction (see back page of ‘Blood Component and Prescription Record’).
- For Complications of Transfusion - See Appendix Nine
- Adverse blood reactions and events must be reported by law to the Medicines and Health Care Products Regulatory Agency (MHRA) – the reporting system is known as SABRE (Serious Adverse Blood Reactions and Events).
- Inform Blood Bank of adverse reactions/events.
- The Haemovigilance Practitioner will complete online reporting to SHOT/SABRE following discussion of adverse reactions/events with the Hospital Transfusion Team.
- If a transfusion reaction is suspected a member of the medical staff must be contacted immediately. The patient’s temperature, pulse, blood pressure and respirations must be recorded.
- If a severe transfusion reaction is suspected:
  - the transfusion must be stopped and urgent medical advice obtained.
  - the blood administration set must be changed and venous access maintained using normal saline, running slowly to keep the vein open.
  - the reaction must be reported immediately to the hospital blood bank.
  - the unit and patient identification details must be re-checked to ensure that the patient is receiving the correct unit
- Any blood component remaining in the pack and the administration set must be returned to the Blood Bank for testing. Blood and urine samples from the patient will be required by the laboratory.
- Complete and return the pink ‘Suspected Transfusion Reaction Form’ to Blood Bank at time of event (see Appendix Ten) – available via Trust Intranet – click on ‘Guidelines, procedures and protocols’ then ‘Blood Transfusion Guidelines’
- A qualified nurse is responsible for ensuring that vital signs are monitored – a doctor must issue instructions on their frequency.
- The volume and colour of any urine passed must be recorded.
- All adverse events related to blood transfusion must be reported to Blood Bank.
- If a severe reaction is suspected, medical advice from a Consultant Haematologist must be sought.

23.0 Documentation

Medical notes

- A permanent record of the transfusion of blood components and the administration of blood components must be kept in the medical notes.
- The following items must be included: - compatibility report form, Blood Component and Prescription Record
- An entry in the case notes, describing the indication for the use of the blood component, the date, the number and type transfused, whether or not it achieved the desired effect, the occurrence and management of any adverse effect, and a record that risks and benefits have been explained to the patient.

Nursing notes

- The following items must be included: - start time, finish time, number and type transfused, the occurrence and management of any adverse event.
24.0 Use of Emergency Uncrossmatched O RhD Negative Blood (Flying Squad)
Emergency Blood is Group O Rhesus D negative and has not been cross matched against the patient for transfusion. There are risks associated with transfusing uncrossmatched O Rhesus D negative blood. Where the patient’s blood group is known and confirmed, it is safer to transfuse ABO Rhesus D compatible blood (group specific blood). Emergency O Rhesus D negative blood must only be used when the patients’ condition indicates that there is no time to wait for group specific blood (i.e., life-threatening emergency).

A sample for group and screen must be taken from the patient prior to the infusion of the uncrossmatched O Rhesus D negative units.

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altnagelvin – Satellite Blood Fridge, Recovery Area, Main Theatres (also available from Main Blood Bank)</td>
<td>6</td>
</tr>
<tr>
<td>Erne Hospital – Blood Bank Issue Fridge</td>
<td>2</td>
</tr>
<tr>
<td>Tyrone County Hospital – Blood Bank Issue Fridge</td>
<td>6</td>
</tr>
</tbody>
</table>

- If it is necessary to use the emergency O Rhesus D negative blood the following procedure must be followed:
  - Inform the Blood Bank when the emergency O Rhesus D negative blood is removed. This ensures the laboratory replaces the blood for potential use elsewhere.
  - Complete details regarding date, time and signature on the Blood Traceability Record
  - Complete relevant documentation at Blood Bank Fridge regarding units removed
- After the blood has been transfused the Blood Traceability Record should be completed with the patients details (first name, surname, date of birth, patient identification number) and returned to the Blood Bank to ensure full traceability of the used units
- Should circumstances change and the emergency blood is no longer required it should be returned to the blood bank fridge within 30 minutes to prevent wastage.

25.0 Receiving blood components transferred from another Hospital
Blood received from another hospital must be taken to the Blood Bank immediately and given to a member of staff. Biomedical Scientists (BMS) will determine the integrity of the units and if they can or cannot be used.
26.0 Transferring blood with a patient to another Hospital

- If unused en route, the blood will most probably be discarded by the receiving Hospital unless the blood component is taken directly to the blood bank and the packaging has remained sealed.
- Ambulance personnel are not permitted to transfuse a patient.
- Most receiving hospitals prefer to use blood grouped & cross-matched by their own Blood Bank.
- As soon as a decision to send blood has been made, Blood Bank should be contacted immediately.
- Inform Blood Bank staff regarding patient information, expected time of transfer and expected destination of patient.
- Blood Bank staff will pack the blood in a transport box and provide relevant paperwork.
- Blood Bank staff will fax the Blood Bank at the receiving hospital and give patient and blood component details.
- If the blood is not required in transit do not break the seal on the transport box.
- If blood is required, the accompanying doctor/nurse (who has been trained and competently assessed as per the NPSA Safer Practice Notice 'Right Patient, Right Blood') must follow the proper blood administration procedure.
- On arrival at the receiving hospital arrangements must be made to transfer the unused units to the Blood Bank as soon as possible.
27.0 Definition of Blood Products
Blood products are any therapeutic product derived from human whole blood or plasma donations. As plasma from any single donor could introduce infectious agents into the batch, scrupulous attention is paid to testing for transmissible viruses and steps are taken to inactivate viruses during processing. However, no blood product can be guaranteed to be ‘risk free’.

Since Blood Products do not contain red cell antigens or significant red cell antibodies, compatibility is not an issue. All plasma derivatives are blood products and their administration, including all batch numbers and expiry dates, should be carefully documented.

Blood Bank should be contacted in the event of any adverse reactions to blood products.

When blood products are required from Blood Bank, a Blood Collection Form should be completed (see section 12.0).

27.1 Anti D Immunoglobulin
- Is prepared from human plasma containing high levels of anti-D antibody. The Blood Bank holds a stock of relevant doses. The product is stored at 4°C, in the dark, and is issued to named patients on request.
- Anti D prophylaxis is offered to all non-sensitised pregnant women who are Rhesus D negative. The treatment is required to prevent women producing anti D antibodies, which might cause Haemolytic Disease of the Newborn (HDN) in future pregnancies. HDN in its worse form may result in stillbirth or infants with severe disabilities.
- Staff involved in the use of Anti D should refer to the WHSCT Guidelines - Routine administration of Anti-D prophylaxis (2008) – available from Maternity Departments
- Refer to manufacturers instructions in relation to administration guidelines.

27.2 Human Albumin Solutions (5% or 20%)
- Is a protein found naturally in the blood which is needed for many different functions. Human albumin is produced from pooled donor plasma with the final product being sterilised by filtration and heat treatment.
- Is indicated to restore and maintain circulating blood volume where volume deficiency has been demonstrated, and use of a colloid is appropriate.
- Does not require to be infused through a blood administration giving set with a filter. A standard intravenous infusion giving set is suitable.
- The usual dose for administration is decided by the medical staff involved in the patient’s care and is determined by the patient’s condition and response to treatment.
- Any unused albumin not given to a patient should be returned as soon as possible to the Blood Bank.
- Occasionally causes anaphylactic reactions and patients should be monitored carefully.
27.3  **Immunoglobulins (IgG)**
- Are the antibodies produced by B-lymphocytes in response to infection. Immunoglobulins are therefore important for the correct functioning of the immune system, fighting bacterial infections, neutralising viruses and activating the complement systems.
- Are given when the patient fails to make adequate antibodies or as protection against particular infections. In other instances they are used to modify the way in which the patient’s immune system is working, usually by ‘blocking’ the action of other harmful antibodies.
- NIBTS should be informed of all new patients requiring IgG.
- Are supplied by NIBTS on a named basis only.
- The doses used vary according to the indication. Recording the weight and height of the patient are important to assist the clinician in determining the dose required for the patient.
- Infusion rates are given in the product data sheets and it is important that these are not exceeded. The infusion is started slowly and gradually increased to a maximum infusion rate in the absence of any reactions.

27.4  **Prothrombin Complex Concentrate**
- May be required to ensure the appropriate management of patients who have life threatening haemorrhage and are on warfarin. Rapid anticoagulant reversal is required when there is life threatening haemorrhage, trauma or prior to emergency surgery.
- Should be used in conjunction with vitamin K.
- Recording the weight of the patient is important when determining dose required for the patient.
- Is contraindicated in patients with DIC or uncompensated liver disease.
- Octaplex is the Prothrombin Complex Concentrate available for use within the WHSCT. Octaplex is available from Blood Bank on a named patient basis only.
- Refer to manufacturers instructions in relation to the administration guidelines.

27.5  **Recombinant Factor VIIa (Novoseven) (rFVIIa)**
- Is an initiator of thrombin generation. It works directly with tissue factor at the site of a haemorrhage to accomplish haemostasis (clotting). It has been shown that it may be more effective if used earlier in the course of bleeding.
- Refer to manufacturers instructions in relation to the administration guidelines.
### 28.0 Summary of Blood Components

<table>
<thead>
<tr>
<th>Blood Component</th>
<th>Giving Set</th>
<th>Transfusion Time</th>
<th>Storage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Blood Cells</td>
<td>Blood Administration Giving Set</td>
<td>To commence within 30 min of removal from fridge</td>
<td>2°C - 6°C in an approved, alarmed blood storage fridge only (has controlled temperature monitoring)</td>
<td>Shelf life 35 days If infusion pumps used, they must be used according to manufacturer’s instructions</td>
</tr>
<tr>
<td></td>
<td>Change at least every 12 hours</td>
<td>Transfusion duration 2 - 3 hrs</td>
<td></td>
<td>Minimum observations baseline, 15 mins after commencement and at end of transfusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Must be completed within 4 hours from removal from controlled cold chain storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platelets</td>
<td>Blood Administration Giving Set</td>
<td>Transfusion duration 30 minutes</td>
<td>Stored at room temperature with constant agitation</td>
<td>Shelf life 5 days If infusion pumps used, they must be used according to manufacturer’s instructions</td>
</tr>
<tr>
<td></td>
<td>Do not use a Giving Set that has been previously used for blood</td>
<td>Use as soon as delivered to clinical area</td>
<td></td>
<td>Minimum observations baseline, 15 mins after commencement and at end of transfusion</td>
</tr>
<tr>
<td>Fresh Frozen Plasma (FFP)</td>
<td>Blood Administration Giving Set</td>
<td>Transfusion duration 30 minutes</td>
<td>Stored at &lt;-30°C</td>
<td>Takes approximately 30 minutes to thaw in Blood Bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thawed FFP may be stored for 24hr in a temperature controlled fridge, but must be transfused within 4 hrs if taken to clinical area</td>
<td></td>
<td>Take sample for PT, APTT, fibrinogen before FFP is transfused</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post thaw storage results in a decline in the content of labile coagulation factors</td>
<td></td>
<td>If infusion pumps used, they must be used according to manufacturer’s instructions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Minimum observations baseline, 15 mins after commencement and at end of transfusion</td>
</tr>
<tr>
<td>Blood Component</td>
<td>Giving Set</td>
<td>Transfusion Time</td>
<td>Storage</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------</td>
<td>------------------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>Cryoprecipitate</td>
<td>Blood Administration Giving Set</td>
<td>Transfusion duration 30 minutes</td>
<td>Stored at &lt; -30°C When thawed must be stored at ambient temperature</td>
<td>Takes approximately 30 minutes to thaw in Blood Bank Must be transfused within 4 hrs if taken to clinical area If infusion pumps used, they must be used according to manufacturer’s instructions Minimum observations baseline, 15 mins after commencement and at end of transfusion</td>
</tr>
</tbody>
</table>
### 29.0 Summary of Blood Products

<table>
<thead>
<tr>
<th>Blood Product</th>
<th>Giving Set</th>
<th>Transfusion Time</th>
<th>Storage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albumin</td>
<td>Standard intravenous infusion giving set</td>
<td>Infusion rate as per individual circumstances</td>
<td>Between 2°C and 25°C</td>
<td>Must be used within 3 hours of opening&lt;br&gt;Between 2°C and 25°C</td>
</tr>
<tr>
<td>Anti D</td>
<td>N/A</td>
<td>N/A</td>
<td>Between 2°C and 8°C</td>
<td>Administered by I.M. injection&lt;br&gt;Dosage as per WHSCT Guidelines - Routine administration of Anti-D prophylaxis (2008)&lt;br&gt;Refer to product information leaflet regarding preparation&lt;br&gt;Issued on named patient basis only</td>
</tr>
<tr>
<td>Immunoglobulin</td>
<td>Standard intravenous infusion giving set</td>
<td>Infusion rates as per clinicians advise</td>
<td>Between 2°C and 8°C</td>
<td>Dose used depends on clinical condition, weight &amp; height of patient&lt;br&gt;Issued on named patient basis only&lt;br&gt;Refer to product information leaflet regarding preparation</td>
</tr>
<tr>
<td>Prothrombin Complex Concentrate</td>
<td>N/A</td>
<td>Refer to package insert regarding rate</td>
<td>Below 25°C (not to be frozen)</td>
<td>Octaplex used in WHSCT - issued on named patient basis only&lt;br&gt;Used in conjunction with vitamin K&lt;br&gt;Discuss dose with Consultant Haematologist&lt;br&gt;Refer to product information leaflet regarding preparation</td>
</tr>
<tr>
<td>Novoseven</td>
<td>N/A</td>
<td>Refer to Regional Guidelines on Trust Intranet</td>
<td>Between 2°C and 8°C</td>
<td>Refer to information on Trust Intranet - use outside licensed indications not recommended.&lt;br&gt;Refer to package insert regarding dose and preparation</td>
</tr>
</tbody>
</table>

---

**Policy for Blood Component Transfusion in Adults**

Page 38 of 56
30.0 Appendices

Appendix One

Northern Ireland Regional Transfusion Committee

Red Cell Transfusion Guidelines

<65yrs – no cardiac/cerebrovascular problems –
  ➢ Transfuse if Hb < 7g/dl

>65yrs - no cardiac/cerebrovascular problems –
  ➢ Transfuse if Hb < 8g/dl

Known cardiac/cerebrovascular problems –
  ➢ Transfuse if Hb < 9g/dl

Symptomatic (dyspnoeic, tachycardia, palpitations) –
  ➢ Transfuse if Hb <10g/dl

Massive bleed –
  ➢ Transfuse if Hb <10g/dl

Current bone marrow failure/chemotherapy/radiation therapy –
  ➢ Transfuse if Hb <10g/dl
Appendix Two

Guidance on use of Fresh Frozen Plasma (FFP) & Cryoprecipitate
(ambered version of NIRTC, 2009)

Contact a clinical haematologist sooner rather than later if you have any concerns.

**Definition of coagulopathy**

Deficiency of one or more coagulation factors, evident as:
- Abnormal coagulation screen (PT, APTT > 1.5 X normal)
- Microvascular bleeding

**Indications for FFP transfusion**

Coagulopathy with bleeding

or

Coagulopathy prior to an invasive procedure, which carries a risk of haemorrhage.

Coagulopathy could be attributed to:
- Liver disease
- DIC
- Surgical / trauma induced bleeding

**Indications for Cryoprecipitate transfusion**

Plasma fibrinogen < 1g/L with bleeding

or

Plasma fibrinogen < 1g/L prior to an invasive procedure, which carries a risk of haemorrhage.

**In massive blood loss anticipate requirement for:**
- FFP if blood loss exceeds 1 blood volume
- Cryoprecipitate if blood loss exceeds 1.5 times blood volume

**FFP transfusion:**

1. Confirm criteria for transfusion
2. Request from Blood Bank 1 therapeutic dose for an adult, child or neonate - 12 - 15 ml / kg body weight
   [1 unit of FFP contains 300 ml - on average 4 units would provide one therapeutic dose for a 70kg adult]
3. Send a baseline coagulation screen to Haematology
4. Allow 30 minute thaw time for FFP
5. Transfuse through blood administration set within 4 hr of thawing
6. Check coagulation screen for response.

**Cryoprecipitate transfusion:**

1. Confirm criteria for transfusion
2. Give 1 therapeutic dose:
   - Adult: 2 pooled bags
   - Child or neonate: 2 ml/kg body weight of single donor units
   [1 single donor unit contains 20-40 ml cryoprecipitate]
3. Check serum fibrinogen (coagulation screen) for response.

**Aim to stop bleeding, rather than to normalise coagulation screen**

**FFP is NOT indicated in the following situations:**

a) Reversal of warfarin induced coagulopathy in the absence of bleeding or when Prothrombin Complex Concentrate is available
b) Correction of coagulopathy in the absence of bleeding or anticipated peri-operative blood loss
c) Volume or plasma expansion in adults or children
Appendix Three

## NI Hospital Transfusion Request Form

### Transfusion History & Test Request

<table>
<thead>
<tr>
<th>Blood Group (If known)</th>
<th>Atypical Antibodies (if known)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous transfusions</td>
<td>Yes [ ] No [ ] If yes: date of most recent transfusion</td>
</tr>
<tr>
<td>Previous reactions</td>
<td>Yes [ ] No [ ]</td>
</tr>
<tr>
<td>Previous pregnancies</td>
<td>Yes [ ] No [ ] Anti-D given recently (&lt;12 weeks) Yes [ ] No [ ]</td>
</tr>
</tbody>
</table>

Group & Antibody screen (held for 7 days) | Direct Antibody Test (Coomb's Test) | Kleihauer Test |

I confirm that the patient identification details correspond to the details of the patient and the sample tube. Within the last 3 years I am certified as competently in core competency in obtaining a suitable sample for pre-transfusion testing. Sample taken by [Indicate staff group]  

PRINT Signature Date

The above section MUST BE signed by the person taking the sample, failure to do so will result in the sample being rejected.

### Product Request

<table>
<thead>
<tr>
<th>Components</th>
<th>Red Cells</th>
<th>Platelets</th>
<th>FFP</th>
<th>Cryo.</th>
<th>Other Product Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Special Requirements

- [ ] CMV negative (CMV)  
- [ ] Irradiated (FFP)  
- [ ] Methylamine Blue Treated

### Indication for Red Cell Transfusion

- Age < 65 years Hb < 7g/dl
- Age > 65 years Hb < 8g/dl
- Cardiac / cerebrovascular symptoms Hb < 9g/dl
- Significant haemorrhage > 500ml / hour
- Bone Marrow failure syndromes Hb < 10g/dl
- Patient on Chemotherapy Hb < 10g/dl
- Symptomatic of anaemia, Hb < 10g/dl
- Massive Transfusion protocol
  (Please contact blood bank immediately)

*Dyspnoea, angina, palpitations, tachycardia, orthostatic hypotension and syncope documented and likely to be due to anaemia.

Requested by [Indicate staff group]  

PRINT Signature

**Product requests will not be processed unless the above section is completed and signed.**
## Appendix Four

### MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE (MSBOS)

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>MSBOS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Obstetrics</strong></td>
<td></td>
</tr>
<tr>
<td>Caesarian Section</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Removal of Placenta</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Major Placenta Praevia</td>
<td>2 units</td>
</tr>
<tr>
<td>Significant acute Antepartum, Intrapartum or Postpartum haemorrhage</td>
<td>2 – 4 units</td>
</tr>
<tr>
<td>Ectopic Pregnancy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Anaemia in Labour (Hb &lt; 10)</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Previous PPH</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Trial of Vacuum / Forceps in theatre</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>3rd Degree tear</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Multiple birth</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Breech presentation</td>
<td>G&amp;S</td>
</tr>
<tr>
<td><strong>Gynaecology</strong></td>
<td></td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Myomectomy</td>
<td>2 units</td>
</tr>
<tr>
<td>Vaginal Repair</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Salpingectomy/Oopherectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Colposuspension</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Evacuation of Uterus</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Operative Laparoscopic Procedure</td>
<td>G&amp;S</td>
</tr>
<tr>
<td><strong>Orthopaedic Surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Fixation fractured neck of femur (Hb &lt; 10.4)</td>
<td>2 units</td>
</tr>
<tr>
<td>Fixation fractured neck of femur (Hb &gt; 10.4)</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Total Hip Replacement</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Austin-Moore prosthesis</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Fractured Tibia</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Total Knee Replacement</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Revision of THR</td>
<td>2 units</td>
</tr>
<tr>
<td>Revision Knee Replacement</td>
<td>2 units</td>
</tr>
<tr>
<td><strong>ENT / Oral Maxillofacial Surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Thyroid/Parathyroid Surgery</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Parotid Surgery (with potential for complications)</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Parotid Surgery (involving reconstruction or splitting of mandible)</td>
<td>2 units</td>
</tr>
</tbody>
</table>
# MAXIMUM SURGICAL BLOOD ORDERING SCHEDULE (MSBOS)

<table>
<thead>
<tr>
<th>PROCEDURE</th>
<th>MSBOS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Amputation</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Mastectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Excision of Breast Lesion</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Cholecystectomy (Open or Laparoscopic)</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Total Gastrectomy</td>
<td>2 units</td>
</tr>
<tr>
<td>Partial Gastrectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>ERCP</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Liver Biopsy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Splenectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Emergency Laparotomy (Discuss with senior clinician as cross match X 2 units may be required)</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Abdominal-Perineal resection of Rectum</td>
<td>2 units</td>
</tr>
<tr>
<td>Right Hemi - Colectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Sigmoid Colectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Abdominal Colectomy</td>
<td>2 units</td>
</tr>
<tr>
<td>Anterior Resection</td>
<td>2 units</td>
</tr>
<tr>
<td><strong>Vascular Surgery</strong></td>
<td></td>
</tr>
<tr>
<td>Aortic Aneurysm Repair</td>
<td>6 units</td>
</tr>
<tr>
<td>Femoral Bypass</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Carotid Endarterectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td><strong>Urology</strong></td>
<td></td>
</tr>
<tr>
<td>Radical Cystectomy</td>
<td>4 units</td>
</tr>
<tr>
<td>Nephrectomy (Open or Laparoscopic)</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Percutaneous Renal Surgery (PCNL)</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Prostatectomy (TURP)</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Resection of Bladder Tumour</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Radical Prostatectomy</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Urethroplasty</td>
<td>G&amp;S</td>
</tr>
<tr>
<td>Renal Biopsy</td>
<td>G&amp;S</td>
</tr>
</tbody>
</table>
Appendix Five

Indications for ‘Special’ Blood Components
(Handbook of Transfusion Medicine, 2007)

The Blood Bank laboratory system can store historic patient information relating to patients who require special requirements. This can act as a back-up system, but it is important that clinical staff are aware that the responsibility for ensuring that patient’s with special requirements receive the appropriate blood components remains with the person making the request.

**CMV-Antibody-Negative Components**
CMV (Cytomegalovirus) infection can cause serious morbidity in immunocompromised CMV negative patients. The risk can be minimised by the use of CMV-antibody-negative (seronegative) blood components. CMV-antibody-negative components should be used for the following:
- Transfusions to neonates and infants under 1 year old
- CMV-antibody-negative pregnant women
- CMV-antibody-negative recipients of allogeneic stem cell grafts
- Intrauterine transfusions (IUT)
- Patients with HIV disease

**Gamma Irradiated Components**
Transfused donor lymphocytes which are compatible with the recipient, but which recognise the recipient as foreign, can engraft and initiate TA-GvHD (Transfusion-Associated Graft-Versus-Host Disease). TA-GvHD can be prevented by gamma irradiating the blood components to be transfused. Gamma irradiated components should be used for the following:
- Transfusions from first- or second-degree relatives
- Any granulocyte transfusion for any recipient
- HLA-selected platelet units
- Patients receiving purine analogues (fludarabine, cladribine, deoxycoformycin): probably safer to use indefinitely
- Intrauterine transfusion (IUT)
- Exchange transfusion (provided that irradiation does not unduly delay transfusion)
- Red cell or platelet transfusion in neonates – only if there has been a previous IUT or if blood is from first- or second-degree relative
- All recipients of allogeneic haemopoietic stem cell (HSC) grafts, from start of conditioning therapy and while patient remains on GvHD prophylaxis
- Blood transfused to allogeneic HSC donors before or during the harvest of their HSC
- Patients who will have autologous HSC graft:
  - any transfusion within 7 days of the collection of their HSC
  - any transfusion from the start of conditioning therapy until 3 months post transplant
  - any transfusion from the start of conditioning therapy until 6 months post transplant if conditioning TBI has been given
- Hodgkin’s disease, at all stages of the disease
- Congenital immunodeficiency with defective cell-mediated immunity
Appendix Six

BLOOD COLLECTION FORM

A Blood Collection Form must be used when a patient is ready to receive a transfusion of a blood component/blood product.

You must:
1. Complete patient information accurately (or attach addressograph label)
2. Ensure clinical area details completed so that staff member aware of area to receive blood component
3. Indicate blood component required
4. Only one unit of blood will be issued at any one time unless it is an emergency situation
5. Patient identification check must be undertaken by person completing form
6. Details regarding name, position, signature, clinical area, date and time must be completed by staff member who has been certified as competent in ‘Organising a request for a Blood Component for transfusion’
7. Forward Blood Collection Form as below:

Northern Sector

Monday to Friday 9a.m. – 5p.m.
- Send Blood Collection Form in vacuum system to Blood Bank (code 870)
- Follow up phone call to Blood Bank (Ext 3376)
- In an emergency situation where more than one unit is required, inform Blood Bank (Ext 3376)

Out of hours
(Monday to Friday 5p.m. – 9a.m. & 24 hour period at weekends/bank holidays)
- Send Blood Collection Form in vacuum system to Post Room (code 120)
- Follow up phone call to Portering Staff to inform them that Blood Collection Form sent
- In an emergency situation where more than one unit is required, inform Portering Staff

Southern Sector
- Identify an appropriate member of staff to collect the blood component (Nursing Staff or Health Care Assistant)
Blood Collection Form – Northern Sector

WESTERN HEALTH & SOCIAL CARE TRUST
BLOOD COLLECTION FORM (Northern Sector)

Patient Details: (if using addressograph label, please indicate clinical area)

- Hospital Number:
- First Name & Surname:
- Date of Birth:
- Gender:
- Clinical Area:
- Consultant:

Blood Component/Product Required:

- Red Blood Cells
- Platelets
- Fresh Frozen Plasma
- Cryoprecipitate
- Other (specify)

Blood Component/Product Required:

- Irradiated
- CMV Negative

Blood Collection Form completed by:

1) I confirm that the patient identification details correspond to the details of the patient and the patient identification wristband.
2) Within the last 3 years I have been certified as competent in “Organising a request for a Blood Component for Transfusion”

- Name:
- Position:
- Signature:
- Clinical Area:
- Date:
- Time:

MUST be completed by Clinical Staff before Blood Component/Product will be released from Blood Bank.

- 8am – 5pm send in vacuum system to Blood Bank, code 870, then follow up phone call to Blood Bank Ext 3376
- Out of Hours send in vacuum system to Post Room, code 120, then follow up phone call to Porters
### WESTERN HEALTH & SOCIAL CARE TRUST - BLOOD TRACEABILITY RECORD

<table>
<thead>
<tr>
<th><strong>Unit Number:</strong></th>
<th>Please keep this form with the Unit until it is either transfused or returned to the Blood Bank.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient:</strong></td>
<td>If this Unit has been removed from refrigeration for more than 30 minutes, contact Blood Bank for advice.</td>
</tr>
<tr>
<td>Hospital Number:</td>
<td>Please return Blood Traceability Record to Blood Bank upon commencement of transfusion.</td>
</tr>
<tr>
<td>First Name:</td>
<td></td>
</tr>
<tr>
<td>Surname:</td>
<td></td>
</tr>
<tr>
<td>Date of Birth:</td>
<td></td>
</tr>
<tr>
<td>Gender:</td>
<td></td>
</tr>
<tr>
<td>Clinical Area:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>UNIT REMOVED FROM BLOOD BANK BY:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Within the last 3 years I have been certified as competent in &quot;Collecting a blood component for transfusion&quot;)</td>
<td>Staff Name (PRINT CLEARLY):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>UNIT RECEIVED ON CLINICAL AREA BY:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Within the last 3 years I have been certified as competent in &quot;Preparing and administering a transfusion of a blood component&quot;)</td>
<td>Staff Name (PRINT CLEARLY):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>TRANSFUSION COMMENCED BY:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Name (PRINT CLEARLY):</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>If Unit not going to be used, returned to Blood Bank by:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Name (PRINT CLEARLY):</td>
<td></td>
</tr>
<tr>
<td>Unit returned to Blood Bank: Returned to stock: Wasted:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Date</strong></th>
<th><strong>Time</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Electronic Infusion Pumps

**Baxter Infusion Pumps**

**Red Cells, FFP & Cryoprecipitate & Platelets**

Infusion Pump: - Colleague Volumetric Infusion Pump

Administration Set: - Colleague compatible giving set with a suitable filter (C9609)

**Graseby Infusion Pumps**

**Red Cells, FFP, Cryoprecipitate & Platelets**

Infusion Pump: - Volume 500 Pump

Administration Set: - Graseby IV Administration Set (8C-591)
### Acute complications

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>TIMING IN RELATION TO TRANSFUSION AND FREQUENCY OF OCCURRENCE</th>
<th>SEVERITY OF RESULTING CLINICAL CONDITION, MANAGEMENT AND PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute intravascular haemolysis of transfused red cells</td>
<td>ABO-incompatible transfusion, e.g. Group A blood into Group O recipient. Usually occurs due to simple clerical errors e.g. taking samples for compatibility testing from the wrong patient or transfusing blood to the wrong patient.</td>
<td>Often during first few ml of transfusion. Reported to occur in about 1 in 600 000 units transfused.</td>
<td>Mortality approx. 10% due to DIC and acute renal failure&lt;br&gt;&lt;b&gt;Management:&lt;/b&gt; consider possibility of DIC and renal failure. Maintain blood pressure and renal perfusion.&lt;br&gt;&lt;b&gt;Prevention:&lt;/b&gt; use safe documentation and checking systems for blood administration</td>
</tr>
<tr>
<td>Febrile non-haemolytic reactions</td>
<td>(1) Antileucocyte antibodies in patient who has been pregnant or previously transfused, reacting against leucocytes in the transfused blood.&lt;br&gt;(2) Cytokines in stored platelet concentrates</td>
<td>Towards end of infusion or within hours of completing the transfusion. Frequency: 0.5-1% of red cell transfusions (often in multi-transfused patients). Becoming less frequent due to use of leucocyte depleted blood components</td>
<td>Unpleasant but not life threatening.&lt;br&gt;&lt;b&gt;Treatment:&lt;/b&gt; Paracetamol or other anti-pyretic</td>
</tr>
<tr>
<td>Urticaria</td>
<td>Antibodies in patient to the infused plasma proteins or infusion of allergens which react with IgE antibodies in the patient. More likely to occur with transfusion of platelets or plasma than with red cells.</td>
<td>During the transfusion. Frequency: 1-2% of transfusions</td>
<td>Unpleasant but not life threatening.&lt;br&gt;&lt;b&gt;Treatment:&lt;/b&gt; Give chlorpheniramine 10-20 mg i.v./i.m.&lt;br&gt;&lt;b&gt;Prevention:&lt;/b&gt; premedicate with chlorpheniramine 10-20 mg before transfusion in patients having recurrent episodes</td>
</tr>
</tbody>
</table>
Acute complications (continued)

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>TIMING IN RELATION TO TRANSFUSION AND FREQUENCY OF OCCURRENCE</th>
<th>SEVERITY OF RESULTING CLINICAL CONDITION, MANAGEMENT AND PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaphylaxis</td>
<td>In some cases antibodies are found in patient against IgA in the transfused blood; these patients are often deficient in IgA</td>
<td>Very rare</td>
<td>May be life threatening. Management: maintain airway. Give adrenaline 0.5-1 mg by slow i.v. injection. Repeat the injection of adrenaline every 10-min until improvement occurs. Prevention: use washed red cells and platelets, plasma from IgA deficient donors, or autologous blood.</td>
</tr>
<tr>
<td>Infective shock</td>
<td>Bacterial contamination of red cells or platelets with e.g. Pseudomonas, Yersinia, staphylococci.</td>
<td>Usually during infusion of the first 100ml of the contaminated pack. Rare: 2 per million components transfused,</td>
<td>Very high mortality. Treatment: management of sepsicaemia. Fluids and intravenous antibiotics</td>
</tr>
<tr>
<td>Transfusion-related acute lung injury (TRALI). Noncardiogenic pulmonary oedema</td>
<td>Donor plasma (usually from multiparous women) has antibodies to patient leucocytes. Clinically, there is an acute respiratory reaction with fever, cough, shortness of breath and typical appearances on the X-ray.</td>
<td>During or soon after transfusion</td>
<td>May be life threatening. Management: maintain airway. Manage as for acute respiratory distress syndrome.</td>
</tr>
</tbody>
</table>
## Delayed complications

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>TIMING IN RELATION TO TRANSFUSION AND FREQUENCY OF OCCURRENCE</th>
<th>SEVERITY OF RESULTING CLINICAL CONDITION, MANAGEMENT AND PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delayed haemolysis of transfused red cells</td>
<td>Patient has IgG antibodies to red cell antigens e.g. Rh, Kidd, Kell, Duffy because of previous pregnancies or transfusions. The antibodies are undetectable in the crossmatch, but further transfusion causes a secondary response resulting in delayed haemolysis.</td>
<td>5–10 days after transfusion. &lt; 1 in 500 red cell transfusions</td>
<td>Poorer than expected response to transfusion. <strong>Treatment:</strong> no treatment needed <em>per se</em>, but antibodies will be a problem for further transfusion. The hospital blood bank should record the presence of red cell antibodies in the patient’s records, and this information should be available when compatibility testing is carried out in the future.</td>
</tr>
<tr>
<td>Transfusion-associated-graft-versus-host disease. (TA-GvHD)</td>
<td>Immune reaction to donor T cells against the recipient who is often immuno-deficient, e.g. bone marrow allograft recipient, Hodgkin’s disease, foetus receiving intrauterine transfusion. Clinically, there is fever, skin rash, liver and renal failure and pancytopenia.</td>
<td>4–30 days after transfusion. Rare: approximately 1 in 700,000 units of cellular blood components transfused</td>
<td>Usually fatal <strong>Treatment:</strong> seek specialist medical advice. <strong>Prevention:</strong> gamma-irradiation of cellular blood components for susceptible recipients (see BCSH 1996b)</td>
</tr>
<tr>
<td>Post-transfusion purpura</td>
<td>Immune-mediated thrombocytopenia, usually occurring in parous women. Antibodies against human platelet (HPAs) are detectable in the patient’s serum, usually anti-HPA-1a</td>
<td>5–12 days after transfusion</td>
<td>Thrombocytopenia is usually severe and may cause bleeding. <strong>Treatment:</strong> platelet infusions are ineffective and the treatment of choice is high dose i.v. immunoglobulin. 0.4 k/Kg body weight of the patient for 5 days. <strong>Prevention:</strong> for future transfusions, use HPA-1a-negative red cell and platelet transfusions If HPA-1a-negative red cells are unavailable use leucocyte-depleted red cells.</td>
</tr>
</tbody>
</table>
### Delayed complications (continued)

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>TIMING IN RELATION TO TRANSFUSION AND FREQUENCY OF OCCURRENCE</th>
<th>SEVERITY OF RESULTING CLINICAL CONDITION, MANAGEMENT AND PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-transfusion viral infection</td>
<td>Viral infection in donor not detected by donor screening and testing.</td>
<td>Depends on virus: weeks or months post-transfusion. Frequency: &lt; 1 in 3 million for HIV and &lt; 1 in 200,000 for HBV and HCV</td>
<td>Depends on virus. Management: Seek specialist medical advice</td>
</tr>
<tr>
<td>Iron overload</td>
<td>One unit of red cells contains 250 mg of iron. Patients receiving multiple frequent transfusions are at risk.</td>
<td>After several years of frequent transfusions</td>
<td>Causes liver and cardiac damage. Prevention: Use desferrioxamine to increase iron excretion in patients likely to receive long-term transfusions</td>
</tr>
</tbody>
</table>
Appendix Ten

Investigation of a Suspected Blood Component Transfusion Reaction

Suspected Transfusion Reaction in Altnagelvin/Tyrone County – contact Altnagelvin Blood Bank Ext 3376;
Suspected Transfusion Reaction in Erne contact Erne Blood Bank Ext 2361

1. Please complete the following details: -

<table>
<thead>
<tr>
<th>Hospital Number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Surname</td>
<td></td>
</tr>
<tr>
<td>First Name</td>
<td></td>
</tr>
<tr>
<td>Date of Birth</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Ward</td>
<td></td>
</tr>
<tr>
<td>Consultant</td>
<td></td>
</tr>
<tr>
<td>Date of Event</td>
<td></td>
</tr>
<tr>
<td>Time of Event</td>
<td></td>
</tr>
</tbody>
</table>

2. Please forward the following to the laboratory department: -

- Donor pack causing reaction complete with blood administration giving set & previous transfusion packs from current admission (in sealed plastic bag) – Blood Bank
- Group & Screen (Post transfusion) – Blood Bank
- Full Blood Count – Haematology
- Liver Function Test – Biochemistry
- Urea & Electrolytes – Biochemistry
- Urine for haemolysis (First MSSU post reaction) – Microbiology
- Blood Cultures – Microbiology
- Coagulation Screen - Haematology

3. Medical Staff responsible for the patient to complete the following: -

<table>
<thead>
<tr>
<th>Patient History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Transfusion</td>
</tr>
<tr>
<td>Reason for Current Transfusion</td>
</tr>
<tr>
<td>Pretransfusion Haemoglobin</td>
</tr>
<tr>
<td>Female Patient</td>
</tr>
<tr>
<td>If ‘Yes’, Pregnancy History</td>
</tr>
<tr>
<td>If ‘Yes’ Number of Pregnancies</td>
</tr>
<tr>
<td>Previous Abortion</td>
</tr>
<tr>
<td>Previous Miscarriages</td>
</tr>
<tr>
<td>Atypical Antibodies</td>
</tr>
<tr>
<td>Previous Transfusion Reactions</td>
</tr>
<tr>
<td>Symptoms of Reaction</td>
</tr>
<tr>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Pyrexia</td>
</tr>
<tr>
<td>Rigor</td>
</tr>
<tr>
<td>Lumbar Pain</td>
</tr>
<tr>
<td>Rash</td>
</tr>
<tr>
<td>Hypotension</td>
</tr>
<tr>
<td>Tachycardia</td>
</tr>
<tr>
<td>Haemoglobinuria</td>
</tr>
<tr>
<td>Vomiting</td>
</tr>
<tr>
<td>Jaundice</td>
</tr>
<tr>
<td>Oliguria / Anuria</td>
</tr>
<tr>
<td>Other (Please Specify)</td>
</tr>
</tbody>
</table>

Volume of urine passed since reaction ______________ mls

- **Blood Pack Unit associated with reaction**

<table>
<thead>
<tr>
<th>Blood Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhesus D Group</td>
<td></td>
</tr>
<tr>
<td>Unit Number</td>
<td></td>
</tr>
<tr>
<td>Expiry Date</td>
<td></td>
</tr>
<tr>
<td>Date unit taken from Blood Bank</td>
<td></td>
</tr>
<tr>
<td>Time unit taken from Blood Bank</td>
<td></td>
</tr>
<tr>
<td>Time transfusion commenced</td>
<td></td>
</tr>
<tr>
<td>Time transfusion discontinued</td>
<td></td>
</tr>
<tr>
<td>Number of units already transfused during this admission</td>
<td></td>
</tr>
<tr>
<td>Unit number of all other packs transfused during this admission</td>
<td></td>
</tr>
<tr>
<td>Anything injected into the blood pack or giving set?</td>
<td>Yes/No (Please circle appropriate response)</td>
</tr>
<tr>
<td>Approximate volume of blood transfused</td>
<td>______________ mls</td>
</tr>
</tbody>
</table>

Signature     Designation

Print Name

Date     Time

PLEASE ENSURE THAT BOTH PAGES ARE COMPLETED.
31.0 References


Health Service Circular 2002/009 Better Blood Transfusion. Safe and Appropriate Use of Blood. DoH (BBT2)


UK Blood Safety and Quality Regulations (BSQR)  
www.opsi.gov.uk/si/si2005/20050050.htm