Lincolnshire Community Health Services NHS Trust

Blood Transfusion Policy

Reference No:	P_CS_11
Version:	6
Ratified by:	LCHS Trust Board
Date ratified:	12th September 2017
Name of originator/author:	Diane Smith
Name of responsible committee/individual:	Effective Practitioner Assurance Group
Date Approved by committee/individual:	19th July 2017
Date issued:	September 2017
Review date:	July 2019
Target audience:	All staff undertaking Blood Transfusion
Distributed via:	Website

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Version Control Sheet

Version	Section/Para/Appendix	Version/Description of Amendments	Date	Author/Amended by
3	Policy Statement	Titles changes to reflect new organisation	4.1.2012	J. Anderson
	4	Reference to organisation training needs analysis added	4.1.2012	J. Anderson
	5	Names changed to reflect new organisation & renumbered from CPS032a to P_CS_11	4.1.2012	J Anderson
4	14 Policy/Procedure for logging blood as transfused using unitcheck	Removed as no longer relevant	29.11.12	K. Kerman/D. Smith
	Pages; 9,18,19,20,21,22,23, 25,26, 27,28,29,52, 56,	Changes to reflect use of Bloodhound System	29.11.12	K. Kerman/D. Smith
5	Changes made to page 9,10,15,31 & appendix 3	Changes in line with current policy	28.11.14	K. Kerman/D. Smith
5.1		Extension agreed	January 2017	Corporate Assurance Team
6	Throughout document	Changes in line with NICE 24 recommendations, added to references	11/04/16	D Smith
	Page 23	Reference added to intended introduction of hand held checking devices		
	Page 41, and throughout document	Use of Fresh Frozen Plasma, platelets and Cryoprecipitate Removed, as not used in Trust	11/02/17	
	Appendix 10	Clarity on prescribers responsibilities around consent	11/07/16	
	Appendix 11	Contact numbers for further advice updated. Table removed for compatibility/availability as information in text.		
	Appendix 5	Competence assessment detail added		
	Page 10, 11	Changed the responsible group/person titles	15/02/17	
	Throughout appendices	Removed reference to children and babies		

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Lincolnshire Community Health Services NHS Trust
Blood Transfusion Policy

Policy Statement

Background

The administration of blood is associated with medical and legal risks. It is everyone's duty to take care and exercise professional skills so the recipients are not harmed as a result of the administration of blood and blood products.
The Health Circular HCS 2002/009 Better Blood Transfusion sets out a programme of action for the NHS to:

- Ensure that better blood transfusion is an integral part of the NHS.
- Make blood transfusions safer.
- Avoid unnecessary use of blood in clinical practice.
- Provide better information to patient and the public about blood.

Statement

The purpose of this policy is to establish safe and consistent practice in the administration of blood, reduce risk, minimise errors and maintain patient safety.

The objective of this policy is to inform all healthcare staff involved in the administration of blood transfusions of the principles of safe and secure handling and administration of blood.

Responsibilities

Chief Executive, Chief Nurse, Business Unit General Managers, Senior Managers, Staff.

Training

All new staff, that will be involved in the transfusion process must attend induction training in blood transfusion, undertake annual training on blood transfusion and reassessment every three years.

Dissemination

Website

Via Email Cascade

Identified in the LCHS staff newsletter/Team Brief

Resource implication

It is expected that the strategy will be delivered within existing resources.

1. Introduction

The policy consists of a general statement and a series of accompanying documents that can be used separately to inform various aspects of blood transfusion practice. It is hoped that this structure will be easier to use and will facilitate upgrading of individual procedures and guidelines that can be easily replaced in the overall document.

2. Purpose

This policy and the accompanying procedures and guidelines aim to describe safe best practice for the blood transfusion process.

2.1 Objective

This document will outline the Lincolnshire Community Health Services (LCHS) policy and define procedures that will outline areas of responsibilities/define roles.

Provide a written description and guidance on all aspects of transfusion practice.

Comply with all relevant local and national guidelines.

Comply with NHSLA Standards.

2.2 Scope

This policy and its accompanying procedures will apply to all LCHS employees, contract staff and third parties working on behalf of LCHS.

3. Duties

3.1 Nursing Staff

A nurse is defined as holding a current registration of the Nursing and Midwifery Council Professional register as a Nurse (RN), registered Sick Children's nurse (RSCN) or Registered Midwife (RM).

Nurses may (in accordance with the accompanying procedures):

- Order Blood Products according to protocols agreed by the Transfusion Committee
- Take blood samples for Blood Grouping and Cross-matching
- Arrange the collection of blood from Blood Bank

Nurses will (in accordance with the accompanying procedures):

- Be responsible for providing information to patients and ensuring consent agreed for the transfusion. Blood transfusion leaflet to be given.
- Be responsible for administering the blood product
- Be responsible for record keeping and completion of adequate documentation
- Monitor and record patient observations
- Be responsible for reporting any adverse symptoms
- Be responsible for registering the blood product for Audit purpose

3.2 Medical Staff

Medical staff are defined as doctors holding full, limited or provisional registration with the General Medical Council (and from November 2009 holding a licence to practice).

Medical staff may (in accordance with the accompanying procedures):

- Be responsible for ordering the relevant blood product
- Fill out a request form for blood products
- Prescribe blood products
- Notify the laboratory of special requirements
- Overseeing the clinical investigation and management of transfusion reactions or other incidents related to the transfusion
- Carry out all procedures that may be carried out by nurses as stated in 3.1

3.3 Ancillary Staff including Health Care Support Workers and Porters

After appropriate training ancillary staff may:

- Take blood samples for Blood Grouping and X-matching for blood for transfusion
- Collect blood products from Blood Bank

In addition, Health Care Support Workers may after training and under the supervision of a registered nurse may:

- Monitor and record patient observations
- Be responsible for reporting any adverse symptoms

3.4 Blood Bank Staff

Blood bank staff are those staff (Biomedical Scientists, Trainee Biomedical Scientist and Medical Laboratory Assistants) specifically approved by the laboratory to work in this area.

Blood Bank Staff are responsible for:

- Checking that the blood samples and request forms received are correctly labelled according to Path Links Policy
- Blood grouping and compatibility testing according to the Laboratory Standard Operating Procedures (S.O.P)
- Checking whether the request or historical file for each patient specifies any special requirements whenever a request is made
- Ensuring that blood products are properly labelled and all documentation completed according to the laboratory S.O.P.
- Overseeing the laboratory investigation and reporting of transfusion reactions or other incidents related to the transfusion
- Retaining records of blood transfusions for 30 years

3.5 Transfusion Practitioners

LCHS will work closely with, and have representation on United Lincolnshire Hospitals NHS Trust (ULHT) Transfusion Committee, therefore the transfusion practitioner appointed for this role will be an identified employee from ULHT.

Transfusion Practitioners have the function of:

- Encouraging safe working transfusion practices
- Encouraging effective use of resources
- Educating LCHS staff in bleed transfusion practice
- Implementing LCHS blood transfusion policies and procedures
- Developing and promulgating Transfusion protocols and guidelines
- Developing a strategic approach to transfusion practice
- Affecting the changes needed to implement national guidelines, directives and regulations relating to the transfusion process

3.6 Trust Lead for Transfusion

The Lead for transfusion is an accredited consultant haematologist with sessions allocated for this duty. LCHS will work closely with, and have representation on ULHT Transfusion Committee therefore the lead for transfusion appointed for this role will be an identified consultant from ULHT.

The Lead for Transfusion will:

- Be up to date in matters relating to transfusion practice
- Oversee the functioning of the Transfusion Committee
- Supervise the work of the Transfusion Practitioners
- Advise LCHS management on any matters relating to transfusion
- Prepare an annual report on all issues related to transfusion practice that require action by LCHS management

3.7 The Blood Transfusion Committee

The Blood Transfusion Committee is a ULHT wide group that meets four times a year. Its members include representatives of all specialities chosen through the management structure as well as haematologists, transfusion laboratory managers, specialist practitioners of transfusion, relevant managers and the lead clinician for transfusion. Any other interested parties are also welcome to attend the Committee Meeting and should contact the chairman. Current membership and terms of reference are posted on the ULHT Blood Transfusion Web Site. The committee includes management and clinical representation from LCHS.

4. Training

All new staff, that will be involved in the transfusion process, from prescriptions to final administration and monitoring, including phlebotomists, laboratory staff, porters, nurses, medical staff and non-trust employees, must attend induction training in blood transfusion regardless of whether they have attended induction sessions at other hospitals, so that they are aware of the relevant regulations, policies and procedures within LCHS.

Training will be as detailed within the organisations training needs analysis.

All staff involved in the transfusion process, from prescription to final administration and monitoring must undertake 2 yearly training on blood transfusion.

All staff involved in support functions to ensure patients receive the appropriate blood products including Venepuncture, Blood product Collection and Blood Product Administration will undergo a competency assessment every 3 years using training pack devised by the Transfusion Practitioner. (Please note training timings in relation to services covered in this policy only, Different criteria applicable to staff providing a phlebotomy service in the community).

It is the responsibility of all staff to follow LCHS blood transfusion guidance, as well as abide by the Blood Safety and Quality Regulations 2005.

A record of staff training will be documented in the LCHS Workforce Department records.

5. Monitoring

Minimum requirement to be monitored	**Process for monitoring e.g. audit**	**Responsible individuals/ group/ committee**	**Frequency of monitoring/ audit**	**Responsible individuals/ group/ committee (multidisciplinary) for review of results**	**Responsible individuals/ group/ committee for development of action plan**	**Responsible individuals/ group/ committee for monitoring of action plan**
Compliance with this policy will be monitored by an annual audit undertaken by Sister, Manby Ward, Louth Hospital to allow the monitoring of: • Safe Administration of Blood and Blood components • Traceability of all blood and blood products and components • Training and competency assessment • Path links/Blood transfusion Liaison Officer to feedback to Manby Ward Clinical Lead on use of unit-check for monitoring/audit purposes	Audit	Louth Hospital Clinical Lead, Manby Ward	Annually	Community Hospitals Quality and Risk Committee	Matron, Louth and Skegness Community Hospitals	Community Hospitals Quality and Risk Committee

The results of the audit will be monitored at the LCHS Louth Hospital Quality & Risk Committee. The author will be responsible for producing an action plan from the audit which will be monitored at the LCHS Louth Hospital Quality & Risk Committee.

Any incidents will be monthly reported by the Risk Manager to the Community Hospitals Quality and Risk Committee. Any action will be the responsibility of the Matron, Louth and Skegness Community Hospitals and will be monitored by the Louth Hospital Quality and Risk Group.

6. Review

This policy will be reviewed as a minimum, every 2 years. Its related procedures will be reviewed 2 yearly but not necessarily concurrently.

Any comments about this Policy can be sent to the appropriate representative on the Blood Transfusion Committee who can then bring the comments to the next meeting for discussion.

The current policy and procedures will be displayed on the NHS Lincolnshire web-site.

7. References

Various BCSH Guidelines (1990-2007)
Blood Safety and Quality Regulations 2005
NPSA Safer Practice Notice 14 “Right Blood Right Patient”
NICE Guideline NG24

REQUESTING BLOOD FOR A TRANSFUSION

GOAL

To ensure that blood for transfusion is available in an appropriate and timely manner

SCOPE

It is for medical staff to request blood for transfusion although in some emergency circumstances or where there is a protocol agreed by the transfusion committee this responsibility may be delegated.

Identifying the need

The doctor requesting the transfusion should be clear that there is (or is likely to be) a need for the transfusion and should be aware of the trusts polices relating to this.

See

- Use of red cells – transfusion triggers (Appendix 15)

In addition the doctor should be confident that the patient's prognosis and/or quality of life is likely to be improved by the procedure, and discuss the risks/benefits with the patient.

Assessing the urgency

For patients that do not have an up to date (see below) group and save sample tested-red cell products have the following availability.

O negative blood – immediately available – not suitable for patients with a history of blood group antibodies. Likely to be safer for those patients who have not had a previous transfusion and, in the case of females, have not had children but can be used never the less.

Group specific – available within 15 minutes of receipt of two samples in the laboratory – not suitable for patients with a history of blood group antibodies. Likely to be safer for those patients who have not had a previous transfusion and, in the case of females, have not had children but can be used never the less.

X-matched blood – available within 45 minutes of receipt of sample in the laboratory provided blood group antibodies are not detected.

For patients that have already had two group and save samples tested and have a negative antibody screen – red cell products have the following availability.

Group specific blood is immediately available and should be used in preference to O negative blood.

Communication with the laboratory

It is essential that the laboratory is aware of the requester's requirements. The date and time of the intended transfusion should be clearly stated on the request form. If there is a change of plan (because of change in operating schedule for instance) the laboratory must be informed. Clinical teams should have routine procedures in place to ensure this.

For urgent and emergency requests there should be telephone communication with the laboratory to discuss the requirements and to determine the laboratory's priority and ability to respond.

Obtaining informed consent

See

- Obtaining consent from a patient for the transfusion of blood products (Appendix 10)

Raising a request form

Please see Appendix 3.

Arranging for a sample to be taken

See

- Taking a blood sample for pre-transfusion testing (Appendix 3)

Timing of samples in relation to time of transfusion

Patients who have had a recent transfusion may be mounting an immune response to blood group antigens and therefore must be tested on an up-to-date sample

Transfused within previous	**Specimen to be taken no more than**
3 to 14 days	24 hours before transfusion
15 to 28 days	72 hours before transfusion
29 to 90 days	7 days before the transfusion

For pregnant women, particularly during the last trimester of pregnancy, samples should never be more that 7 days old.

For easy reference this information is printed on the reverse of request forms.

Prescribing the transfusion

See

- Prescribing a blood transfusion (Appendix 2)

PRESCRIBING A BLOOD TRANSFUSION –

GOAL

The safe and appropriate administration of blood by transfusion to a patient.

Adequate record keeping to

- Ensure the correct blood is given to the correct patient
- Identify the reason for transfusion
- Demonstrate proper procedures have been followed and observations made
- Trace the fate of blood

The Prescription

Only a qualified and appropriately trained medical practitioner can prescribe a blood transfusion.

A designated blood prescription form should be used.

The prescription form should state

The patients details:

- Surname
- Forename(s) (initials not sufficient)
- Date of birth (year of birth or age not sufficient)
- NHS or Accident and Emergency Unidentified victim number)
- Sex
- Location where the transfusion will be given
- Consultant responsible

Time and date of request

The requirements

- The date and time that the blood is required
- The reason for the transfusion request
- Any pre-medication and medication to be given during the transfusion
- The type of blood component required
- Special requirements if any (eg gamma irradiated, CMV negative etc)
- The volume/quantity to be given
- The rate or duration of infusion
- A legible signature and name in block capitals

The ward / unit where the transfusion is to take place should be informed and the prescription forwarded to the nurse in charge.

TAKING A BLOOD SAMPLE FOR PRE-TRANSFUSION TESTING

GOAL

To ensure that correct samples are taken from the correct patient in a safe manner

SCOPE

Any member of staff who has been trained and assessed in venepuncture technique may take the sample from an adult by venepuncture. Samples from pre-inserted lines will normally be taken by doctors or nurses trained in the handling of the specific device.

EQUIPMENT

Blood transfusion request form

Sample bottle containing Potassium Ethylene Diamine Tetra Acetic acid (K3EDTA) – see below for examples of acceptable bottles

Equipment for taking sample depending on the site

Ball point or indelible pen

PROCEDURE

Check the transfusion request form is correctly completed and contains the following information

Patient Identification

1. Surname
2. Forename(s) initial not sufficient
3. Date of birth – year of birth or age not sufficient
4. NHS number or Accident and Emergency number
5. Gender

In the case of unidentified casualties only 4 and 5 are required

Other details

6. Location
7. Consultant
8. Requesting doctor and bleep number
9. Signature of requesting doctor
10. Time and date of request
11. Time and date the blood component is required
12. Relevant clinical details and reason for request
13. Legible signature
14. Previous blood group, transfusion history and atypical antibodies (if known)

A pre-printed addressograph label may be used on request forms.

If the form is incomplete do not proceed and refer to requesting clinician

Take the “Equipment” to the patient’s side.

Identify the patient. This will usually be done by asking their name and date of birth (do not ask in a leading manner such as “Are you///”) **and** by examining a wrist band. Special procedures are in place for unidentified casualties (See policy for patient identification bands)

Explain that you wish to take a sample and give the patient opportunity to consent or refuse. See below*

Take the sample (whenever possible using an evacuated sampling system) into the sample tube. If samples for other tests are to be taken at the same time they should be collected in the recommended order (see below) to avoid cross contamination by anticoagulants. Ensure that samples are not contaminated with drip fluids or fluids left in lines.

If this is the first blood transfusion that a patient has received, two cross match blood samples will need to be taken at different times, by a different clinician so that the blood verification process can be completed.

The person taking the blood samples must label the sample tubes ***at the patient's side.***

The following patient identification details must be correctly spelt and clearly written on the sample tubes in ink that is resistant to smudging or running.

1. Surname
2. Forename (not initials)
3. Date of birth
4. NHS number or Accident and Emergency number to match request form
5. Date and time of collection
6. Legible signature of the person taking the sample
7. In case the patient is unidentified, the unique identity number and patient's gender will replace 1 to 4

Sample tubes must not be pre-labelled. Pre-printed labels must not be used on samples.

* **It is not the responsibility of the person taking the sample to seek informed consent for a blood transfusion. In case of doubt refer the patient to the prescriber who has signed the request form or to another member of that clinical team.**

Acceptable Sample tubes

6 ml K_3EDTA Pink top (preferred tube)

6 ml K_3EDTA Purple top (supplied by the National Blood Authority for antenatal testing)

4 ml K_3EDTA Purple top (blood count bottle)

The above are pre evacuated

A non-evacuated 1.3 ml K_3EDTA Purple top bottle is also available if only a small sample is obtainable

Order of taking samples

- Blood culture
- Tubes with citrate additives, for routine coagulation studies
- Tubes for serum with clot activator and / or gel separator (eg. Plain Serum and Gel Serum)
- Tubes with Heparin
- Tubes with additives (EDTA and Fluoride)
- All others ESR
- Place the sample in the plastic bag attached to the request form and seal. Arrange for the samples to be taken to the laboratory by an appropriate method bearing in mind the urgency of the request.

COLLECTION AND RETURN OF BLOOD AND BLOOD PRODUCTS TO CLINICAL AREAS

2.1 PURPOSE

To ensure the safe collection of blood/blood products between Blood Transfusion Refrigerators and Clinical Areas.

2.2 SCOPE

Any member of staff that has received the necessary 3 yearly competency training and attended a 2 yearly mandatory blood awareness session or e-learning package can collect and transfer blood products.

2.3 EQUIPMENT

Documentation including patients name, date of birth, hospital number and product to be collected, using computer generated slip, if system fails hand written slip is acceptable.

Unit of blood product

Blood transport box

2.4 METHOD AUTHORISATION OF COLLECTION

METHOD	**RATIONALE**
1. To authorise the collection of blood/blood products you MUST be able to administer a transfusion	To ensure the authorisation of the blood/blood products is appropriate
2. Ensure patient about to receive transfusion has appropriate patent venous access	To ensure that the transfusion can commence without delay when unit is received on the ward
3. Measure pre transfusion observations before collection of the unit is ordered	To avoid blood/blood product being removed from the blood refrigerator until the patient is clinically able to start the transfusion
4. You should provide the person collecting the blood/blood product with written documentation including the patients name, date of birth, and unique identification number and product to be collected. Use of Bloodhound system preferred.	To ensure the correct unit is selected for the correct patient
5. You should only order one unit at a	To prevent blood/blood products being

time unless an urgent clinical need is identified. If you do order more than one unit then you assume responsibility for the units	out of recorded temperature control for any longer than needed

2.5 COLLECTION OF BLOOD

METHOD	RATIONALE
1. Take written documentation including the patient's name, date of birth, and hospital number to the appropriate collection area. Written documentation should also identify the blood product to be collected	To ensure that the correct product is collected for the correct patient
2, Use of Bloodhound system to obtain access to sample, or if this system fails, find the register document containing the name of the patient you are collecting the blood product for in the Blood Bank Register situated near the Blood Bank refrigerators	To ensure blood products are available for the identified patient
3. Check all patient details on the patients documentation match the bloodhound/register copy	To ensure the correct patient is identified from the bloodhound/register copy
4. Location of blood product found in Bloodhound.	To identify the correct location in the refrigerator of the correct blood product
5. Remove the first unit of blood product in the refrigerator.	To identify the unit containing the cross match report
6. Check the blood product against all patient identification details from the documentation brought for collection and the compatibility level on the bag of blood product	To ensure the correct blood product is collected for the correct patient

NB. If any discrepancies are noted contact the blood bank and ward staff immediately to take advice, do not remove the blood from the blood refrigerator	To inform Laboratory and ward staff of the discrepancies and allow them to take appropriate action
7. If all patient details match place the Unit being collected in a Blood Collection Box for transfer	To ensure safe transportation to requesting ward/department
8. Removal is digitally marked up using Bloodhound, if this fails, you must sign, date and include the time the blood product is taken on the Blood Bank Register copy and if used the Blood Collection Slip	To allow audit of the storage of blood products NB. Once the units are removed and signed for responsibility for that unit passes to the collector
9. Take blood immediately to the requesting ward/department informing the person who authorised the collection that it has arrived	Ensure blood arrives timely and safely within the limits allowed for out of temperature controlled storage
10. The person who authorised the collection should check all patient identification details on the delivered unit and the cross match report before accepting delivery and if used sign the Blood Collection Slip or ward receipt if on Bloodhound system	To check the correct blood component has been collected and delivered to the ward/department NB. Once this has been checked responsibility for the blood product passes to the receiver

2.6 RETURN OF BLOOD TO THE BLOOD REFRIGERATOR

METHOD	**RATIONALE**
1. If it looks like the blood will not be completely transfused within the four hours then return the unit to the blood refrigerator within **30 minutes** of its	To ensure the blood is safe to transfuse if needed at a later date or time

removal NB. Blood should NEVER be stored in any domestic or drugs refrigerator	
2. Return blood using the blood in system on Bloodhound on returning the blood to the blood refrigerator fill in the blood bank register. You must include your signature the date and the time of the bloods return	To allow the safe monitoring and audit of the storage of each unit of blood
3. If blood has been out of the Blood Refrigerator for over one hour and will not be transfused completely within the next three hours contact the Blood Transfusion Laboratory. **DO NOT RETURN IT TO THE BLOOD REFRIGERATOR**	To ensure that blood outside of safe restrictions on temperature controlled storage is not inadvertently transfused at a later time or date

Appendix 5 THE ADMINISTRATION OF BLOOD AND BLOOD PRODUCTS BY TRANSFUSION

GOAL

To ensure the safe administration of blood or blood products by transfusion to a patient.

NOTE

- Members of staff who administer blood/blood products should have completed an induction/preceptorship and be able to show awareness of the Blood Policy and Procedures by completion of blood transfusion competency pack. All staff involved in the Transfusion process should attend 2 yearly update.
- Competence will be reassessed either after an incident or after a period of absence from work greater than six months.
- To administer blood one member of staff is required. It must be a qualified member of staff as identified in the Blood Policy.
- Blood can be administered using a 'gravity' giving set or an electronic infusion device. Administration sets used with infusion devices should be compatible with the device and incorporate an integral mesh filter (170-200 micron). The pre administration checking procedure should include a thorough check of the device and the device settings prior to use.
- All staff administering blood products via an electronic infusion device must have completed the ULHT or LCHS Infusion Control Device (ICD) training pack.

The Trust has in place a policy that advocates a one person checking procedure prior to the administration of blood products

Timing of the Transfusion

- Routine transfusions should be given between the hours of 8am – 8pm unless clinically indicated and staffing levels should be sufficient to enable regular observation of the patient throughout the transfusion episode.
- Transfusion at night caries an increased risk, however, this may be unavoidable. Good clinical reasons are active bleeding/haemolysis or low Hb with symptoms that constitute a genuine clinical risk or are causing the patient unacceptable distress. The reason for transfusing at night must be recorded clearly in the notes.
- Patients should be observed during the subsequent 24hrs (or if discharged home, informed about the possibility of) late adverse reactions to blood transfusion.

EQUIPMENT

Needle
Syringe
Normal saline
Gloves
} To flush IV line

Blood giving set
Drip stand
Prescription chart (fully completed)
Patient notes

METHOD	RATIONALE
1. Patients should be asked to state their name and date of birth (where possible) and confirm with the patients wristband. All patients, including outpatients, must have an ID band before receiving blood or blood products. Note: There may be the introduction of hand held bedside checking devices, for which there will be additional training, and will impact upon the process detailed below. This is dependent upon the ability to produce bar coded wrist bands.	To ensure positive patient identification
2. If there is no patient ID band do not give transfusion until one is checked and in place	NB. Whoever removes the wristband is responsible for replacing it
3. The label on the blood product to be administered should be checked against the patients identification band, confirming the patient's name, date of birth, and NHS number agree. The medical notes should also be checked to confirm blood group if known. Expiry date of the blood checked. The transfused blood group and the patient's blood group should match. The ward receipt element on Bloodhound should be completed, if system down, record receipt on transfusion prescription sheet.	To ensure the correct blood is given to the intended patient. To ensure the blood group to be transfused is compatible with the patients and that the unit of blood or blood products have not expired.
4. The prescription sheet should be checked for any additional instructions or special transfusion requirements the patient may have.	To check if the patient needs irradiated or CMV neg products
5. The patients' general condition should be assessed. Where possible ask the patient if they have had any previous transfusion related	To ensure there are no underlying conditions which might affect the

reaction.	suitability for transfusion.
6. Record a baseline set of observations of temperature, pulse, respiration's and blood pressure within 60 minutes prior to commencing the transfusion. Unless the patient is being continuously monitored the observations should be carried out normally.	To compare with those taken during the transfusion. To detect any signs of fluid overload.
7. When the administrator is satisfied that the blood to be given is intended for that patient and the patient is fit to receive the transfusion then they should sign the prescription chart, recording the unit number (use sticky label)	To provide a record of the care given and the unit number given.
8. Check prescription charts to see if a diuretic has been prescribed to be given with the transfusion and administer if required.	Diuretic is used to prevent fluid overload.
9. Put on gloves. Check the bag for any signs of leakage of discolouration.	Use gloves when handling blood products to protect from contamination. To check for any risk of cross infection.
10. Start transfusion by priming a blood administration giving set and attaching to cannula, having already established that the line is patent using an IV flush of 0.9% saline. Blood should always be given via a separate line to any other intravenous infusion.	Flush to ensure any trances of other drugs or dextrose solutions has been completely cleared from the cannula as Blood should not be allowed to mix with anything other than 0.9% saline (other fluids should only be used if action has been taken to prove safety)
11. Set transfusion rate according to that prescribed.	Maximum of 4 hours, unless a clinical decision to the contrary is made by the prescribing medic. Platelets 30 60 minutes per pack
12. Ensure the cannula is safely and comfortable secured. Advise the patient to inform the ward staff of any discomfort during the infusion. Fate unit on bloodhound.	To detect the risk of extravasation and any transfusion reactions. To comply with the Blood safety & Quality Regulations 2005
13. As a minimum Temp, Pulse and BP should be taken 15 minutes after the start of each unit and after each unit is finished (Consistent with	To assess for circulatory overload or other adverse effects

BCSH guidelines) Patient should be clinically assessed, asking if they feel better or any new symptoms.	
14. Visually observe the patient throughout the whole transfusion, repeat NEWS if clinically indicated	To ensure that any adverse events occurring between the formal observations are detected.
15. Maintain fluid balance chart throughout transfusion.	To assess for circulatory overload
16. Once the transfusion is complete, flush the cannula with normal saline and cap. Cannulas that are no longer required should be removed.	To ensure that the cannula/central line remains patent and reduce the risk of infection.
17. Dispose of all waste and sharps safely	To prevent injury to others
18. Complete all necessary documentation including end of each unit transfused NEWS. Patient should be clinically assessed, asking if they feel better or any new symptoms.	To provide a record of the care given
19. Used blood bags should be immediately disposed of in an **orange** waste bag. If there was a reaction the used blood bag with sealed giving set in situ should be returned to the blood bank if requested.	To allow the blood bank to investigate why the patient reacted.

REFERENCES AND FURTHER READING

BCSH et all (1999) (British Committee for Standards in Haematology)	Guidelines: The Administration of Blood and Blood Components and the Management of Transfused Patients	*Transfusion Medicine* 9, 227-238
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Mallet D, and Dougherty L (2000)	The Royal Marsden Hospital Manual of Clinical Nursing	Blackwell Science, Oxford

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McClelland DBL (2001)	Handbook of Transfusion Medicine (3rd ed)	HMSO

Appendix 6

THE MANAGEMENT AND INVESTIGATION OF TRANSFUSION REACTIONS

1. INTRODUCTION

A reaction to a transfusion may be mild or severe and life threatening. Adequate management depends upon the severity and likely nature of the reaction. It may be necessary to seek specialist advice from senior Haematology medical staff.

2. SCOPE

The aim of this procedure is to guide the management of reactions that occur during or shortly after the transfusion. Delayed reactions and long term complications are not considered.

3. FLOW CHARD FOR MANAGEMENT OF REACTIONS

See appendix 7

4. HAEMOLYTIC MANAGEMENT OF REACTIONS

A haemolytic transfusion reaction is one in which signs of increased red cell destruction are produced as a result of the transfusion. A distinction needs to be made between an immediate reaction and a delayed reaction.

4.1 IMMEDIATE INTRAVASCULAR HAEMOLYTIC REACTION

This may be caused by the transfusion of incompatible red cells, bacterially contaminated or thermally damaged blood. In a conscious patient only a few mls may be sufficient to cause a severe reaction which is seen within minutes of the transfusion. In an unconscious patient some of the symptoms will not be present.

4.1.1 Symptoms (within 15-30 minutes)

- Fever, chills, rigour
- Tachycardia
- Hypotension and circulatory collapse
- Severe pain at intravenous site
- Pain in back or chest
- Dyspnoea

4.1.2 Later symptoms

- Haemoglobinanaemia
- Acute oliguria, renal failure and collapse
- Intravascular coagulation

4.1.3 Management

- Stop the transfusion immediately
- Resuscitate the patient
- Seek advice from Consultant Haematologist, ITU Specialist and Renal Physician
- Maintain blood pressure with artificial plasma expanders
- Take pathology samples for:
    - FBC
    - Coagulation screen
    - LFTs
    - Haptoglobin
    - Blood culture
    - U and Es
    - New crossmatch sample
    - Direct anti-human globulin DCT) test
- Return all blood units and the drip giving set (sealed) to the Blood Transfusion Laboratory
- Test all urine passed for haemoglobin
- Maintain a strict fluid balance sheet
- Track & Trigger observations
- Consider transfer to acute hospital

4.2 IMMEDIATE EXTRAVASCULAR HAEMOLYTRIC REACTION

Other alloantibodies to red cell antigens activate the complement pathway only weakly or not at all and destruction of the red cells takes place in the liver or spleen. This type of reaction is less severe

4.2.1 Symptoms

- Fever
- Rigors
- Jaundice (may occurs days later)

4.2.2 Management

- Stop the transfusion immediately
- Seek advice from Haematologist
- Take pathology samples for:
    - FBC
    - LFT
    - DCT
    - New cross match sample
- Return blood units and giving set to Blood Transfusion laboratory

4.3 DELAYED HAEMOLYSIS

The titre of an antibody in a patient's plasma may be too low to detect in pre-transfusion tests. However if incompatible red cells are transfused a secondary response may be provoked which results in a rapid increase of antibody a few days later, thus causing the destruction of red cells

4.3.1 Symptoms

- Fever
- Drop in haemoglobin level
- Jaundice (often not before 5 days post transfusion, can be as late as day 10)
- Haemoglobin (mean of 8 days post transfusion)

4.3.2 Management

- Discuss with Haematology Consultant
- Take pathology samples for:
    - FBC
    - LFT
    - DCT
    - New cross match sample

4.4 FEBRILE NON-HAEMOLYTIC TRANSFUSION REACTIONS (FNHTR)

FNHTRs are unpleasant but not life threatening, but it should be remembered that a mild febrile reaction might be the early stages of an acute haemolytic reaction. FNHTRs are caused by cytokines in the donor or antibodies to the donor leucocyte antigens. FNHTRs are seen less frequently because of universal leucodepletion of blood components.

4.3.1 Symptoms

- Rise in temperature
- Non-specific accompaniments of any pyrexia
- Often symptoms seen towards the end of the transfusion

4.3.2 Management

- Paracetamol is often all that is required
- The rate of transfusion may be slowed
- If the patient becomes unwell or hypotensive, the transfusion must not be restarted

4.5 ALLERGIC REACTIONS

Caused by antibodies to the infused plasma proteins or infusion of allergens that react with the patients IgE antibodies. It is more likely to occur with platelets and FFP.

4.5.1 Symptoms

- Urticaria
- Itching

4.5.2 Management

- Symptoms subside usually if transfusion is slowed

- Give antihistamine, slowly by injection

4.6 ANAPHYLAXIS

This is a very rare but life threatening complication. The onset is rapid and often dramatic. In some cases it is associated with antibodies against IgA in a patient who has a severe IgA deficiency. Antibodies to other plasma proteins are implicated in other areas.

4.6.1 Symptoms

- Hypotension
- Dyspnoea
- Chest pain
- Abdominal pain
- Urticaria
- Nausea and vomiting

4.6.2 Management

- Immediate action required – discontinue transfusion
- Maintain airway and give oxygen (40-100%)
- Give adrenaline (0.5-1.0mg) intramuscularly
- Repeat adrenaline every 10-20 minutes according to response in pulse rate
- Give hydrocortisone (100-200mg) and chlorpheniramine (10-20mg over at least 5 minutes) – both intravenously
- Give nebulised salbutamol +/- aminophylline infusion
- Seek advise from anaesthetist
- Do not restart transfusion
- Track & Trigger observations
- Consider transfer to an acute hospital
- Future transfusion – use washed, resuspended cellular components or IgA deficient components

4.7 INFUSION OF BACTERIA CONTAMINATED BLOOD PRODUCTS

Although this is extremely rare the mortality remains very high.

4.7.1 Symptoms

- Rapid onset
- Hypotension
- Rigors
- Collapse

4.7.2 Management

- Discontinue transfusion
- Immediate resuscitation with intravenous fluids and antibodies

- Seek advice from Consultants for Haematology, Microbiology and Intensive Care Physician
- Take pathology samples for:
    - Blood cultures
    - Microbiological investigations of the remaining blood components
- Return all blood units and the drip giving set (sealed) to the Blood Transfusion Laboratory
- Liaise with the Blood Transfusion Laboratory to enable completion of appropriate documentation and notification of National Blood Service
- Track & Trigger observations
- Consider transfer to an acute hospital

4.8 TRANSFUSION RELATED ACUTE LUNG INJURY (TRALI)

This rare but life threatening complication is usually due to donor plasma that contains antibodies to the patient's leucocytes.

4.8.1 Symptoms

- Present as features of non-cardiogenic pulmonary oedema
- Chills
- Fever
- Non-productive cough
- Breathlessness

4.8.1 Management

- Immediately seek advice from senior Haematology staff and ITU Physicians
- Notify the National Blood Service, Trent Centre, Sheffield who will carry out appropriate further investigations
- Consider transfer to an acute hospital

4.9 FLUID OVERLOAD

This can occur when correcting chronic anaemia in elderly patients or those with pre-existing cardiac disease

4.9.1 Symptoms

- Dysponoea
- Tachycardia
- Hypotension

4.9.2 Management

- Stop the transfusion
- Give furosemide (40mg) intravenously
- Arrange chest x-ray and ECG

4.10 LATE COMPLICATIONS OF TRANSFUSION

4.10.1 Iron overload

Transfusion dependent patients receiving red blood cells over a long period become overloaded with iron. Chelation therapy with desferrioxamine is used to minimise accumulation of iron

4.10.2 Post-transfusion purpura (PTP)

PTP is a rare but potentially lethal complication of red cell or platelet transfusions. It is often seen in female patients. PTP is caused by platelet-specific antibodies. It can typically be

seen 5-9 days post transfusion, when the patient develops an extremely low platelet count with bleeding. Seek advice from the Consultant Haematologist.

REFERENCES AND FURTHER READING

BCSH et all (1999) (British Committee for Standards in Haematology)	Guidelines: The Administration of Blood and Blood Components and the Management of Transfused Patients	*Transfusion Medicine* 9, 227-238
McClelland DBL (2001)	Handbook of Transfusion Medicine (3rd ed)	HMSO

Appendix 7

Management of Transfusion Reaction Flow Chart

Patient Febrile or non-specifically unwell

Go to flow chart 1 – “Febrile transfusion reaction”

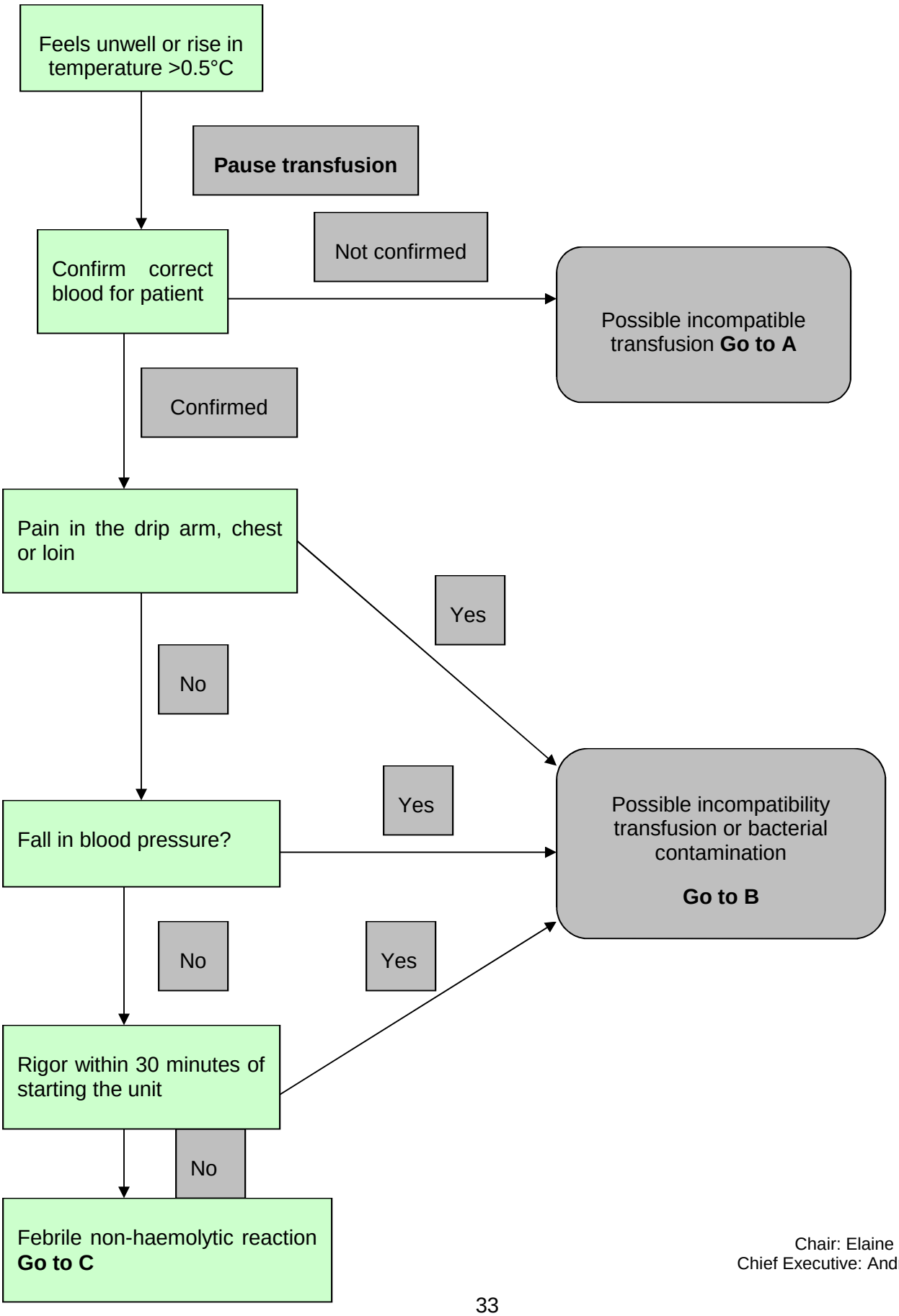
Patient has a rash

Go to flow chart 2 – “Allergic reaction”

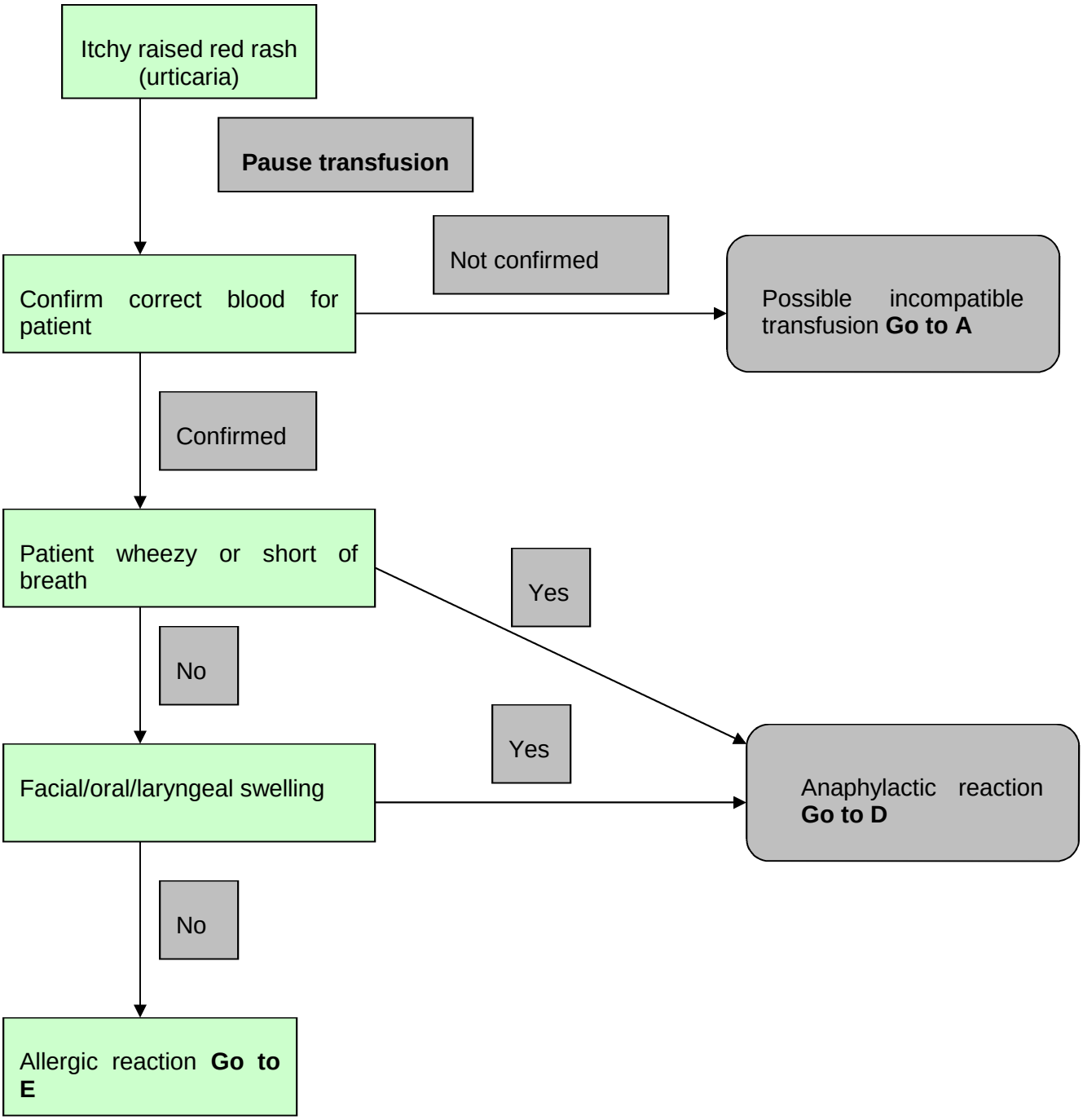
Patient is short of breath

Go to flow chart 3 – “Shortage of breath”

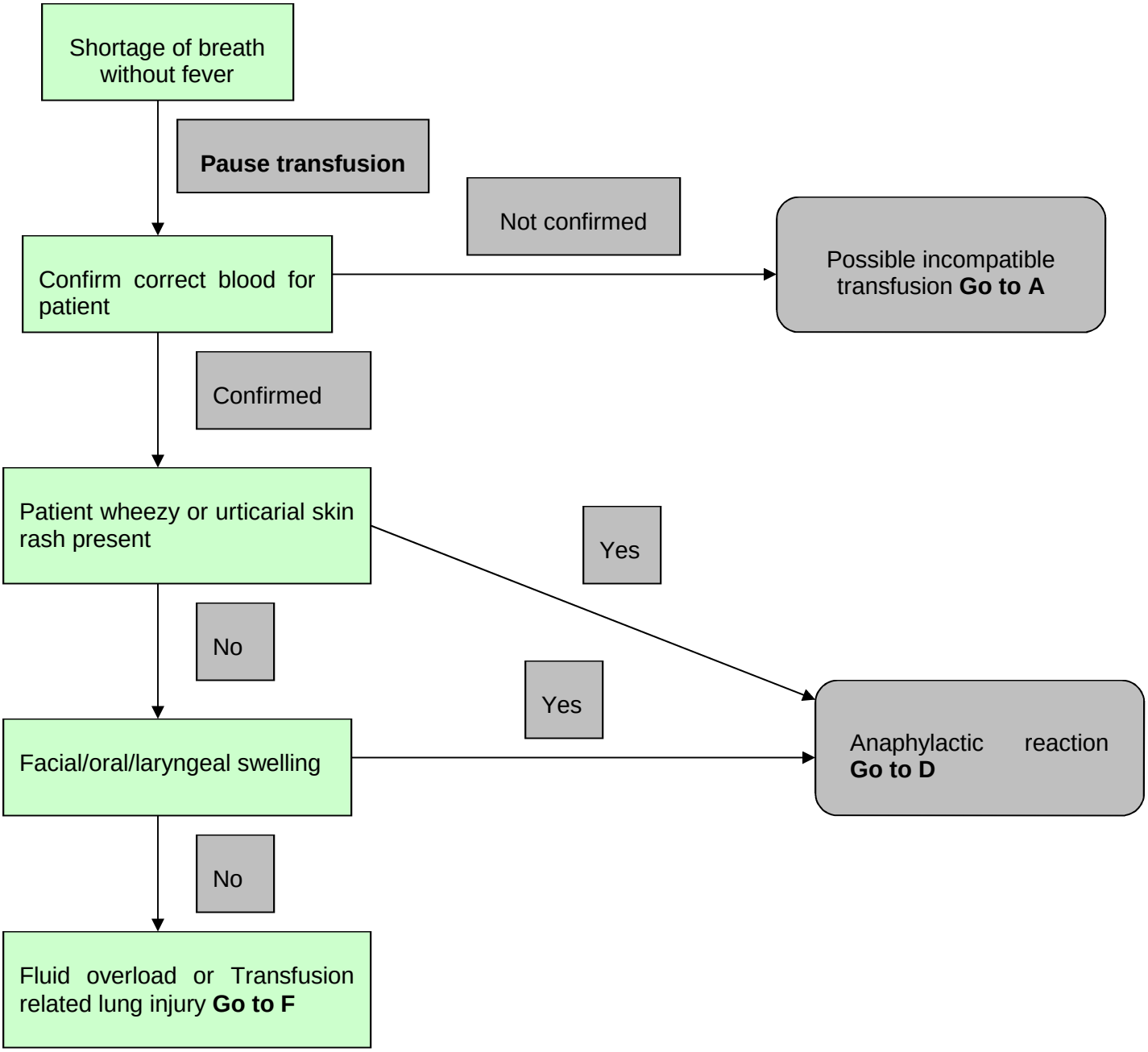
1. Febrile transfusion reaction



2. Allergic reaction



3. Shortage of breath



A. Possible incompatible transfusion

Symptoms and signs

- Apprehension
- Agitation
- Flushing
- Pain at drip site
- Pain in abdomen / back
- Fever
- Hypotension
- Oozing from wounds and puncture sites
- Haemoglobinaemia – haemoglobunuria

Management

- Stop the transfusion without delay
- Resuscitate the patient
- Seek advice from a Consultant Haematologist, Intensive Care Specialist and Renal Physicians
- Maintain blood pressure with artificial plasma expanders
- Take samples for: FBC, coagulation screen, LFTs, haptoglobin, blood culture, U and E and a Blood Transfusion sample for re-group, antibody screen, direct and anti-human globulin test, re-x-matching the unit(s) transfused and x-matching further units
- Record Track & Trigger
- Clamp and return all blood packs and the drip set to the Blood Transfusion laboratory
- Test all urine passed for haemoglobin. Maintain a strict fluid balance sheet
- Consider transfer to an acute hospital

B. Possible bacterial contamination of blood of possible incompatible transfusion

Symptoms and signs

- Flushing
- Fever
- Rigors
- Abdominal pain and vomiting
- Hypotension
- Oozing from wounds and puncture sites
- Haemoglobinaemia – haemoglobinuria

Management

- Proceed as in A above and in addition:
- Blood culture
- Emergency broad spectrum antibiotics
- Manage as Gm negative sepsis – may need ITU support
- Clamp bag and return to transfusion lab with instructions to culture according to protocol

C. Probable non haemolytic febrile transfusion reaction

Symptoms and signs

- Flushing
- Fever
- Rigors if severe

Management

- Give paracetamol 500mg oral
- Transfusion may be restarted
- Continue to monitor – review in 15 minutes according to flow chart for febrile reactions

D. Anaphylactic reaction

Symptoms and signs

- Shortage of breath
- Wheezing
- Oedema
- Itching
- Abdominal pain and vomiting
- Hypotension

Management

- Maintain airway and give oxygen (40-100%)
- Give adrenaline 0.5-1/0mg (0.5 to 1ml of a 1 in 1000 solution) intramuscularly
- Attach patient to cardiac monitor
- Repeat adrenaline every 10-20 minutes according to response in pulse rate
- Hydrocortisone 100-200mg intravenously should be given to prevent later recurrence or biphasic reaction
- Seek advice from anaesthetist if there is not rapid improvement
- Nebulised salbutamol +/- iv. Aminophylline infusion may be necessary for persistent bronchospasm
- Give Chlorpheniramine 10-20mg iv over at least 5 minutes
- Track & Trigger observations
- Consider transfer to an acute hospital

E. Allergic reactions

Symptoms and signs

- Itching and urticarial rash

Management

- Give hydrocortisone 100mg iv and chlopheniramine (piriton) 10mg iv
- Restart transfusion – slow rate if necessary
- Continue to monitor – review in 15 minutes according to flow chart for allergic reactions

F. Fluid overload or transfusion related lung injury

Fluid overload

Symptoms and signs

- Shortage of breath (may be wheezing)
- Fine crackles at lung base
- Raised jugular venous pressure

Management

- Give oxygen (40-100%)
- Give Furosemide 40mg uv
- Do not restart transfusion until symptoms improve

Transfusion related lung injury

Symptoms and signs

- Acute onset of hypoxic respiratory distress/failure
- Symptoms generally begin 1-6 hours following infusion of blood products – most commonly plasma
- Tachycardia, hypotension and fever occur
- Chest x-ray with suggestion of non-cardiogenic oedema
- Frothy sputum secondary to pulmonary oedema

Management

- Give oxygen (40-100%)
- Mechanical ventilation required in 70% of reported cases
- Steroids often used by data lacking and appear no better than supportive care alone
- CXR typically return to normal within 4 days but may persist up to 7 days

Patient can receive blood products from another donor without increased risk.

Appendix 8

GUIDELINES ON PLATELETS

Platelet function disorders

Patients with platelet function disorders rarely need platelet transfusions.

However, acquired causes of platelet dysfunction can exacerbate bleeding in patients who already have impaired haemostasis.

The following recommendations (grade C, level IV) are for the management of bleeding or for prophylaxis before invasive procedures for patients with a known or suspected platelet function disorder. It is no longer considered necessary to use HLA-matched platelet transfusions for non-alloimmunized patients.

- Withdraw drugs known to have anti-platelet activity
- Correct any underlying condition known to be associated with platelet dysfunction, if possible.
- Discuss with Haematologist
- Consider transfer to Acute Hospital site
- Correct haematocrit to >0.30 1/1 in patients with renal failure, either with the use of recombinant erythropoietin or red cell transfusion
- Consider the use of DDAVP (1-deamino-8-D-arginine vasopressin, desmopressin) in patients with inherited dysfunction defects, such as storage pool disease

  If any of the below actions are required, patient MUST be transferred to Acute Hospital
- Consider the use of DDAVP or cryoprecipitate in patients with uraemia
- Use platelet transfusions where the above methods are not appropriate or are ineffective
- Recombinant factor VIIa, has been shown to be effective in the management of bleeding and for prophylaxis before surgery in patients with Glanzmann's

Massive transfusion

Transfer to an Acute Hospital.

Disseminated Intravascular Coagulation (DIC)

Transfer to an Acute Hospital.

Post-transfusion purpura

Autoimmune thrombocytopenia

Platelet transfusions are *generally* ***ineffective in ITP*** and are reserved for patients with life threatening bleeding from the gastrointestinal for genitourinary tracts, bleeding into the central nervous system or other sites associated with severe thrombocytopenia.

In these situations, intravenous methylprednisolone 500mg to 1g (adult dose) and / or high dose IV immunoglobulin (1g/kg body weight /day for 2 days) should be given at the same time to maximise the chances of stopping the haemorrhage and raising the platelet count.

References

(*British Journal of Haematology 2003;* 122, 10-23) and on the United Leicester Hospital NHS Trusts Blood Transfusion Policy (with permission)

NICE guidelines, Ng 24, Nov 2015

Appendix 9

THE EMERGENCY USE OF GROUP O Rh(D) NEGATIVE BLOOD

1. GOAL

To ensure the safe collection and use of uncross matched, emergency group O Rh(D) negative blood

2. NOTES

- Uncross matched group O Rh(D) negative blood MUST ONLY be used when there is a life threatening blood loss and the degree of urgency allows no time to wait for the arrival of group specific or cross matched blood from the blood transfusion laboratory.
- Group specific blood can normally be made available for collection from the transfusion laboratory within 15 minutes of receiving the patient's correctly labelled blood samples. Cross matched blood can be made available for collection within 45 minutes from receipt of the sample – provided no antibodies are detected.
- The laboratory must be informed of the degree of urgency and anticipated blood component requirements if a group specific / cross match request is sent.

3. AVAILABILITY OF EMERGENCY O Rh(D) NEGATIVE

Uncross matched group O Rh(D) negative blood is available for use in extreme emergency in each of the following blood bank refrigerators:

LOUTH SITE

- Path Lab 2 units

4. METHOD

METHOD	RATIONALE
1. Cross matched blood or group specific blood must be used in preference to group O Rh(D) negative blood wherever possible	The safest blood products to use are the ones that are fully cross matched, followed by that that are group specific
2. Patients must be fitted with an identification wrist band	To ensure that the correct patient receives the correct unit of blood
3. Patient's blood sample must always be obtained as the venous access is secured	To ensure a sample is taken for group and antibody screen testing prior to any transfusion of donor blood
4. Emergency O Rh(D) negative blood	To ensure blood is only used when

can be collected without prior notification to the transfusion laboratory – only when there is life threatening blood loss and the degree of urgency allows no time to wait for the arrival of group specific or cross matched blood	clinical situation indicates no time for full cross match or group compatible blood
5. Use of emergency access in Bloodhound to remove unit, smartcard access, locate the blood and place in a blood transit box	To ensure safe transportation to request ward/department
6. Use of Bloodhound to place in transit. Locate the page in the Blood Bank register for that unit – enter date, time of collection and a signature for that unit	To allow the storage of blood and blood products to be audited to ensure safety and to comply with UK blood regulations
7. As soon as possible after the event the transfusion laboratory must be notified that the Emergency O Rh(D) negative blood has been taken – by ward staff, medic to liaise with path lab	This is to ensure its prompt replacement in case of need by others
8. The transfusion laboratory must be given information regarding which patient has received the Emergency O Rh(D) negative units. A form attached to each bag of blood should be completed. One half should be returned to the local transfusion laboratory and the other filed in the patients' notes	This is to ensure the units of blood are attached to the patient's transfusion record, for complete audit purposes and also compliance with UK blood regulations

Form to be completed (sent with the blood) and returned to transfusion laboratory and filed in notes

Appendix 10

OBTAINING CONSENT FROM A PATIENT RECEIVING A BLOOD TRANSFUSION AND PROVIDING INFORMATION

1. INTRODUCTION

At present it is not a requirement for written consent to be obtained prior to patients received a blood transfusion. However every adult has the right to make their own decisions regarding treatment. Verbal consent should be obtained from patients who require a transfusion of blood or blood products. Before a patient can make a decision regarding receiving a transfusion of blood of blood products they should receive comprehensible information regarding the benefits, risk and alternative available. The provision of information is central to obtaining informed consent from the patient.

2. PURPOSE

The purpose of this document is to make staff aware of the Patient information available; to support good practice in terms of ensuring patients are provided with appropriate, comprehensible information in a timely manner. The document will also provide guidance to staff on the process of obtaining consent from a patient prior to Transfusion.

2.1 Objectives

The objectives are:

- To ensure that all patients who are likely to receive a transfusion of blood or blood components are informed of the possible risk and benefits of the procedure in a timely and appropriate manner
- To ensure that patients have given their informed consent prior to the transfusion being carried out
- To ensure that when it is not possible to obtain consent, decisions taken on behalf of the patients are made in their best interests

3. DUTIES

Individuals and departments will have the following duties for provision of information and obtaining consent

3.1 Individuals

- Consider the individual needs of the patients
- Provide information to patient in a way that will be understood by that patient
- Provide patients with the National Blood Service Patient Information Leaflets
- Ensure as far as practically possible that patients have received information in a timely manner which allows patients to consider the information and ask questions

- Ensure as far as practically possible that verbal consent is obtained from patients prior to them receiving a blood transfusion
- Departmental managers should promote an environment that is conducive to providing patients with information
- All staff involved in the transfusion process should ensure they are familiar with information available and that they have current knowledge to allow them to answer questions within their sphere of practice accurately

3.2 Availability of information leaflets

- All inpatient wards/departments, outpatient and reception areas that discuss or administer blood should ensure that they have a supply of current patient information leaflets available
- Ward/departmental managers should ensure that they and the staff are aware of the correct mechanism for ordering current patient information leaflets
- All staff should take a proactive approach to the provision of patient administration leaflets
- The leaflets that will be made available to patients are the National Blood Service Patient Information Leaflets

3.2.1 Types of leaflets available

Below is a selection of the leaflets available, this is not intended as an exhaustive list as information available is regularly updated, staff responsible for supplying patients with information leaflets must ensure that the current and appropriate leaflets are supplied to patients. Also consider if the patient has a visual impairment or low literary skill, as they may need assistance to read the leaflet.

- **Receiving a blood transfusion** – information on: why a blood transfusion may be needed. The safety of transfusions, and how a patient who receives a transfusion will feel
- **Information for patients needing irradiated blood** – information on: why irradiated blood is needed, whether irradiation damages blood and if all types of blood need to be irradiated

3.2.2 Provision of leaflets and information

- Patients who are likely to require a blood transfusion as part of their planned care must receive the patient information at an appropriate time. The exact timing will vary on clinical needs/circumstances, however the timing of the provision of the leaflet should allow the patient the opportunity for discussion and decision making.
- Leaflets should not be used in isolation; they are intended to act as a precursor for a discussion with a registered healthcare professional.
- Healthcare professionals should seek the advice and support of the Hospital Transfusion Team if they are unable to provide patients with appropriate information.
- When patients have received an information leaflet regarding transfusion this should be recorded in the notes by the healthcare professional.
- Where appropriate patients should be made aware of the alternatives to blood transfusion and measure that they themselves can take to avoid the risk of transfusion.

- The privacy and dignity of patients must be respected at all times during discussions or exchange of information.
- A number of patients have particular special needs and these are varied and wide ranging. Whenever a patient is identified as having a special need in regard to receiving and assimilating information extra time should be allocated for the exchange of information and patients should receive the information in an appropriate manner to meet their needs.

3.2.3 Patients whose first language is not English or have a hearing impairment

- Patients information leaflets are available in a number of different languages these can be obtained from the Transfusion Practitioners on the Lincoln and Boston sites.
- The Trust has facilities to enable people whose first language is no English to have access to an interpreter. The switchboard at Louth holds the telephone number for 'Pearl Linguistics'. Consider the need for face to face interpreters or the use of sign language.

4. OBTAINING CONSENT

- The provision of information is central to the consent process. Before a patient can make a decision regarding receiving a transfusion of blood or blood products they must have received comprehensible information regarding their condition and risk involved and the alternatives available.
- Healthcare professional should refer to specific Policy for Consent to Examination and Treatment.
- The process of obtaining consent will vary according to the particular circumstances. However, in general and whenever possible, the doctor prescribing the blood or blood product should begin the process by explaining the need/risks and benefits for transfusion, and must sign the consent area of the prescription sheet (number 3 on prescription sheet). Ultimately it is the responsibility of the person administering the transfusion to ensure that the patient has given consent and is still willing to accept the transfusion. It is not currently policy that consent for transfusion needs to be confirmed by the patient signature on consent form.
- If a patient may require a transfusion whilst under general anaesthetic then this should be explained and consent obtained prior to the procedure.
- Where a patient is unable to give consent healthcare professional should refer to the Mental Capacity Act 2005.
- Documented on blood prescription form.

5. MENTAL CAPACITY ACT 2005

Principals of the Act

The whole Act is underpinned by 5 principals.

- Every adult had the right to make their own decision if they have capacity to do so. A person must therefore always be assumed to have capacity unless it is established otherwise.
- Maximising decision making capacity. A person is not be treated as unable to make a decision unless all practicable steps to help him/her to do so have been taken without success.

- Unwise decision. A person is not to be treated as unable to make a decision because he or she makes what others may consider to be an eccentric or unwise decision.
- Bes interest. Any act done or decision made, under the Mental Capacity Act for or on behalf of a person who lacks capacity must be done or made in his/her best interests.
- Least Restrictive Alternative. Before an act is done, or a decision is made, regard must be had to whether the purpose for which it is needed can be effectively achieved in a way that is less restrictive for the persons rights and freedom of action.

Healthcare professionals should refer to the Mental Capacity Act 2005 when obtaining consent to treatment from patients.

6. References

Policy and Guidance notes for obtaining written consent for examination and treatment

Good Practice guidance for dissemination of information leaflets on blood transfusion Gerard R

Informing patients: An assessment of the quality of patient information materials (1998) Coulter A Enthwistle and Gilbert D

Producing Patients Information: How to research, develop and produce effective information resources (2003) Dunman M King's Fund

WHEN A PATIENT REFUSES THE USE OF BLOOD PRODUCTS

1.1 GOAL

This procedure aims to ensure patient's wishes regarding refusal of blood product transfusion are acknowledged and respected. It also aims to provide information regarding the management of such patients, especially those who are of the Jehovah's Witness faith.

1.2 NOTES ON REFUSAL AND ADVANCED DECISIONS TO REFUSE TREATMENT

The Mental Capacity Act deals with decision making in health care. The Trusts policy on the act is available on the intranet.

The Act is based upon 5 principles, the third of which is that people have a right to make decisions which might be considered "unwise" by others. The refusal of blood may be such a decision.

- If a person has mental capacity and refuses transfusion, then no transfusion should be given.
- People who wish not to be given a transfusion in the future may make an advance directive. This will continue to apply even if they have a temporary or permanent loss of capacity. The advance directive may be verbal or written.
- A verbal advance directive is only valid for refusal of non-life-sustaining treatment – this should be documented in the case notes as soon as possible and the patient strongly encouraged to convert it into a signed written form in the notes.
- A written advance directive is called an Advanced Decision to Refuse Treatment (ADRT).
- An ADRT is a legally binding document. Any adult that is 18 years or older can make an advance decision to refuse treatment provided they have the mental capacity to do so at the time the advance decision is made.
- An ARDT relating to the refusal of "life-sustaining" treatment MUST be in writing. It must confirm the identity of the patient, be specific to the circumstances, confirm which treatments are being refused and include the words "even at risk of life".
- The person making the advance decision is responsible for drawing its existence to the attention of healthcare professionals.
- If a transfusion were to take place in contravention of an ADRT it may be regarded as unlawful and could lead to criminal and/or civil action in court.
- A person can cancel or change an advance decision at any time, provided they have the mental capacity to do so. They can cancel or change the decision orally as well as in writing. If the patient decides they will receive blood products after previously refusing such treatments, the healthcare professional should make sure it is documented in the patient's case notes and alert the rest of patient's medical team. If there was an original ADRT document placed in the case notes, it must be marked as no longer active, the date it was cancelled and who cancelled it.
- If you genuinely believe that you cannot safely treat a person without transfusion you are not obliged to treat them (a conscientious objection). You should make this clear to the patient and the rest of the healthcare team, whilst continuing to provide any other appropriate care. If another health professional believes that they can safely treat the person without transfusion, then the patient should be given the opportunity of transferring their care to that

healthcare professional. If the patient lacks mental capacity, medical staff should arrange for the patient's management to be transferred to the other healthcare professional.

- Refusal of blood products by Jehovah's Witnesses is protected by the terms of the European Convention on Human Rights, which is incorporated into UK law by the Human Rights Act 1998 – freedom to act on religious beliefs.

1.3 **ADMISSION CHECKS**

- If a patient decides to refuse blood products this should also be clearly noted in the case notes. If an ADRT is presented, a copy should be prominently placed in the patient's case notes.
- On admission all patients should be asked their religious beliefs. If the patient is a Jehovah's Witness this should be clearly noted in the case notes.
- It is important that a Clinician explains the potential consequences of not receiving blood products and the risks associated with massive haemorrhage. This discussion should be documented in the case notes.
- Clarify with the patient what forms of treatment he/she will actually accept (does the refusal include all types of blood product or specific types, will the patient accept cell salvage etc) – be quite clear as to what the patient's wishes are in the event of them being unconscious and suffering life threatening blood loss. This should be done in a non-confrontational manner. A detailed record of the discussion, highlighting what treatments are acceptable to the patient, must be documented in the case notes.
- The majority of Jehovah's Witnesses carry on their person either a "No Blood" card or an Advanced Directive card absolutely refusing blood which release Clinicians from any liability arising from this refusal.
- Clinicians involved with the care of the patient should devise a plan of action in case of haemorrhage. For Jehovah's Witness patients the local Jehovah's Witness Hospital Liaison Committee can be contacted for further advice.
- If necessary, consider transferring the patient's care to another doctor or hospital willing to treat the patient without the use of blood, before the patient's condition deteriorates.
- Check what medication the patient is taking, especially aspirin, clopidogrel, warfarin and non-steroidal anti-inflammatory drugs – decide when these should be stopped / replaced.
- Check FBC (especially Hb, Hct, MCV, platelets)

  Coagulation screen

  Ferritin

  B12 / folate

MAKE SURE RESULTS ARE SEEN AND ABNORMAL RESULTS FOLLOWED UP

- Does the patient require any supplements prior to the procedure – eg. Iron tablets, vitamin B12, folic acid.
- Make sure all clinical staff likely to be involved in the patient's treatment, have an accurate understanding of the patient's position with regard to refusal of blood products.
- Complete the checklist at the end of this appendix.

1.4 **EMERGENCY SITUATIONS**

- In emergency situations, healthcare professionals should not delay emergency treatment to look for an ADRT if there is no clear indication that one exists. But, if it is clear one exists (eg. Family/friends draw attention to its existence) the healthcare professional should access it's validity/existence as best they can under the circumstances. If there are genuine doubts about the existence, validity or applicability, treatment can be provided (if the healthcare professional can demonstrate that this belief was reasonable)

1.5 **FURTHER ADVICE**

For further advice and information:

- Mental Capacity Act 2005
- Policy and guidance notes for obtaining written consent for examination and treatment
- Contacts for the local hospital Liaison Committee for Jehovah's Witnesses:
- **For Louth:**

- 2 Jehovah's Witness Hospital Liaison Committee
- www.jw.org/en/medical-library/

- Lincoln and Louth sites:

24 hr contact number:	020 8906 2211	
John Ward:	Tel: 0114 2471713,	Mobile: 07837 962171
Rory Tamplin:	Tel: 01246 769675,	Mobile: 07841 235868
Richard Colley:	Tel: 0114 2899263,	Mobile: 07598 957852
Joe Nadin:	Tel: 01709 530559,	Mobile: 07984 196169

- See the blue Jehovah's Witness information file – located in each clinical area
- The Haematologist on-call
- The On-call manager for LCHS
- The Clinical Governance & Risk Manager for LCHS
- "Advanced Decisions to Refuse Treatment – Specialist Guidance (Adult)" – East Midlands Health and Social Care Community (April 2007) – document found in Mental Health e-learning programme references

References

Policy and guidance notes for obtaining written consent for examination and treatment

Management of anaesthesia for Jehovah's Witnesses; 1999

Association of Anaesthetists of Great Britain and Ireland

Clinical Strategies for managing haemorrhage and anaemia without blood transfusions; 2003. Hospital Information Services

Video – Transfusion Alternative Strategies – Simple, Safe, Effective

Hospital Information Services

Clinical strategies for managing haemorrhage and anaemia without blood transfusion in information services obstetrics and gynaecology; 2002

Care plan for women in labour refusing a blood transfusion; 2002

The Mental Capacity Act of 2005

Checklist for all patients who decline treatment using blood components

Instructions

- This checklist is to be completed by the admitting Doctor / Pre-assessment Nurse in consultation with the patient / parent / guardian and is to be retained in the patient's notes, (attached to their Advance Directive / Advance Decision to Refuse Treatment, ADRT - if there is one available)

Patient Details:

First Name _____

Surname _____

NHS Number / ID Number _____

Date of Birth _____

Date of Surgery _____

a) Procedures checklist

Procedures/processes	Performed?		Comment
Bloods taken for:			
FBC	Yes	No	
Clotting Screen	Yes	No	
Ferritin	Yes	No	
B12 and Folate	Yes	No	
Is your patient taking			
Warfarin	Yes	No	Date to stop:
Aspirin	Yes	No	Date to stop:
Clopidogrel	Yes	No	Date to stop:
Non-steroidal anti-inlammatory drugs	Yes	No	Date to stop:
Other - specify	Yes	No	Date to stop:

b) Communication checklist

Please inform	Informed		Comment
Consultant	Yes	No	
Relevant ward managers	Yes	No	
Other (please specify)	Yes	No	

c) I, the patient / parent / guardian, agree with the following treatments before, during and after the operation

Treatment	Accept		Comment
Red Cells	Yes	No	
Platelets	Yes	No	
Fresh Frozen Plasma (FFP)	Yes	No	
Cryoprecipitate	Yes	No	
Human Albumin Solution	Yes	No	
Erythropoeitin (EPO)	Yes	No	
Non-recombinant clotting factors	Yes	No	
Recombinant clotting factors	Yes	No	
Other – enter description	Yes	No	

Signature of Patient / Parent / Guardian _____

Date _____

Signature of Healthcare Worker _____

Date _____

Appendix 12

TRANSFUSION GUIDELINES FOR MANAGEMENT OF HAEMORRHAGE

(This document gives guidance only on the use of blood components and products in the management of haemorrhage. The medical and surgical management of the patient is outside its scope.)

Assessment of severity of haemorrhage

The appropriate management of haemorrhage will depend on an assessment of the rate and quantity of blood loss.

Management of Moderate Haemorrhage

Haemorrhage of up to 50% of total blood volume (TBV) within 3 hours can, in an emergency situation, be replaced with a combination of clear fluid infusion and blood.

- Less than 20% TBV – crystalloid alone may initially be given
- 20-40% TBV – crystalloid or colloid can be given until blood is available
- More than 40% TBV – give blood

To estimate TBV 70ml/kg in adults, 80 ml/kg in infants

Massive Haemorrhage

Definition of massive haemorrhage:

- Haemorrhage of more than 100%TBV within 24h
- Haemorrhage of 50% within 3h
- Haemorrhage greater that 150ml/min
- Persistent hypertension with continuing bleeding after 4 unit transfusion

Massive transfusion is usually associated with clotting factor and platelet depletion due to dilution, disseminated intravascular coagulopathy (DIC) and fibrinolysis

Massive Rapid Haemorrhage

Rapid uncontrollable haemorrhage with the expectation that >60% total blood volume has or will be lost within 20 minutes

Massive rapid haemorrhage is particularly associated with

- Major trauma
- Ruptured aortic aneurysm
- Obstetric haemorrhage

Once the probability of massive haemorrhage is recognised:

- The Doctor (Surgeon, Anaesthetist, Physician, Intensivist etc) should alert the Blood transfusion Laboratory to the degree of urgency and discuss the availability of blood
- Consider transfer to an Acute Hospital
- Blood samples for

    - Group, antibody screen and Cross match (unless a sample is already available in the laboratory
    - Full blood count
    - Coagulation screen

  Should be sent to the laboratory by a carrier specifically instructed in the urgency of the situation

- The Transfusion Laboratory Staff will assess the availability of suitable blood and communicate this to the doctor in charge of the case
- Group specific blood should be used – if available
- In extreme urgency it may be necessary to use Group O uncross matched blood if the blood group is unknown
- In an emergency premenopausal females whose blood group is unknown should be give O Rh(D) negative red blood cells in order to avoid sensitisation and the risk of haemolytic disease of the new-born in subsequent pregnancy
- It is acceptable to give O Rh(D) positive blood to males and postmenopausal females of unknown group

Microvascular Bleeding (MVB)

Microvascular Bleeding (persistent oozing from small blood vessels) may occur with or without coagulopathy. MVB is most likely under conditions of hypothermia which may be associated with: acidosis, increased blood viscosity, reduced cardiac output, poor tissue perfusion and platelet dysfunction.

Blood Warmers: Using apparatus to warm transfused blood has been shown to prevent hypothermia and reduce microvascular bleeding. The use of a blood warmer is advised for adults receiving transfusion rates greater that 50 ml/kg/hour and children receiving transfusion rates greater than 15ml/kg/hour. When coagulopathy exists this should be treated.

Coagulopathy

Prolongation of the Prothrombin time (PT), activated partial thromboplastin time (APTT) and/or fibrinogen or thrombocytopenia will require correction with blood components when:

- There is bleeding unresponsive to surgical haemostasis
- Invasive procedures or surgery are in progress or planned
- There is a real risk of intracranial bleeding

See also

- THE EMERGENCY USE OF GROUP O Rh(D) NEGATIVE BLOOD (Appendix 10)

- GUIDELINES ON PLATELETS (Appendix 9)

Appendix 13

USE OF RED CELLS - TRANSFUSION TRIGGERS

Introduction

There is no universal trigger for red cell transfusion. The decision to transfuse a patient should be based on haemoglobin level and a careful clinical assessment, indicating that transfusion is necessary to save life or prevent major morbidity.

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Patients should be informed of risks / benefits / available options and this should be documented in case notes. Patient information leaflets are now available for this purpose and should be offered to patients, wherever possible, at the time of proposing blood transfusion. (Further supplies can be obtained from local blood banks). Reasons for transfusion should be clearly documented in the patient's notes.

Background

1) There is evidence of very significant variation in the use of red cell transfusions suggesting that inappropriate use is widespread.
2) There are significant concerns about the safety of blood transfusion with regard to both infectious and non-infectious complications of transfusion, and the uncertain scale of the risk of transmission of variant Creutzfeldt-Jakob disease (vCJD).
3) Women of child bearing age or younger may develop antibodies that later cause haemolytic disease of the newborn
4) Additional safety requirements are increasing the cost of blood components.
5) There are serious concerns relating to the sufficiency of blood supply in the future.

USE OF RED CELLS – Adult Patients

Indications for Red cell Transfusion

The decision to transfuse will depend on an individual; assessment of the risks, cost and anticipated benefit. The benefits of transfusion will depend on the clinical circumstances and the patient's condition including co-morbidity, and prognosis. Some guidance to inform the decision in various clinical circumstances is provided below.

(i): Acute Blood Loss

It is often difficult to estimate the amount of blood loss in this situation. Reference to the following table (Basket et al 1990) may be useful for clinical assessment.

CLASSIFICATION OF HYPOVOLAEMIC SHOCK ACCORDING TO BLOOD LOSS (BASKETT, 1990).

	Class I	Class II	Class III	Class IV
Blood Loss				
Percentage	<15	15-30	30-40	>40
Volume (ml)	750	800-1500	1500-2000	>200
Blood Pressure				
Systolic	Unchanged	Normal	Reduced	Very low
Diastolic	Unchanged	Raised	Reduced	Very low unrecordable
Pulse (beats/min)	Slight	100-120	120 (Thready)	>120 (very thready)
	Tachycardia			
Capillary refill	Normal	Slow (>2s)	Slow (>2s)	Undetectable
Respiratory rate	Normal	Normal	Tachypnoea (>20/min)	Tachypnoea (>20/min)
Urinary flow rate (ml/h)	>30	20-30	10-20	0-10
Extremities	Colour normal	Pale	Pale	Pale & Cold
Complexion	Normal	Pale	Pale	Ashen

Mental State	Alert	Anxious or aggressive	Anxious or aggressive or drowsy	Drowsy, confused, or unconscious

15% loss (750 ml in adult) – crystalloids only may be sufficient unless pre-existing anaemia or cardio-respiratory compromise, or further blood loss anticipated.
15-30% loss (800–1500 mls in an adult) – crystalloids or synthetic colloids. Need for red cell transfusion unlikely unless pre-existing anaemia or cardio-respiratory compromise or further blood loss anticipated.

Patients with more than 30% loss should wherever possible be managed in an appropriate setting such as an acute hospital.

30-40% loss (1500–2000 mls) – rapid volume replacement with crystalloids or synthetic colloids – red cell transfusion will probably be required.
>40% blood loss – refer to protocol for management of massive haemorrhage.

Aim to maintain Hb > 9 g/dL.

iii. Newly presenting Acute anaemia

The cause of the anaemia should be urgently assessed and discussed with the haematologist on duty. The need for transfusion will depend on the underlying diagnosis as well as the degree of anaemia and patient's clinical condition.

iv. Chronic anaemia

In patients without significant symptoms of anaemia, avoid transfusion and establish underlying cause which, if possible should be corrected in preference to embarking on a transfusion program. If the cause is not amenable to treatment then it may be that a long term transfusion support will be required. Patients' tolerance of anaemia is individual and an important factor in making this decision. Generally maintain Hb between 7 g/dl and 10 g/dl. Unless the cause is chronic blood loss, this will result in iron loading and eventual complications of iron overload.

v. Anaemia associated with malignancy

Currently, there is no consensus on transfusion triggers in patients with anaemia

associated with malignancy. The decision will depend on tolerance of anaemia, anticipated quality of life and prognosis. The patient's wishes will be a very important factor. It is unlikely that transfusion would be offered if the Hb is above 8 g/dl.

Summary

1) Decision to transfuse should be based on a careful assessment of patient's clinical state and haemoglobin.
2) Blood transfusion must be justified as essential to prevent major morbidity or mortality.
3) Alternatives to allogeneic red cells should be considered where appropriate.
4) Document precise indication for transfusion in case notes.
5) Risks and benefits of transfusion should be explained to patients and their informed consent obtained. This should be clearly documented in case notes.
6) Patients should be offered an information leaflet (the leaflets are available in all clinical areas and further supplies can be obtained from blood bank).
7) Hb 8 g/dL or above – normally no red cell transfusion required.
8) Hb less than 7 g/dL, no further blood loss anticipated – transfuse 1 unit of red Cells, and clinically review. Aim to maintain Hb at 8-9 g/dL. In the elderly and in patients with ischaemic heart disease, maintain Hb 9-10 g/dL.
9) Hb 7-8 g/dL, in a patient who is otherwise stable and no further blood loss is anticipated, is not normally an indication for transfusion unless the patient is clearly symptomatic of anaemia, or suffers from acute coronary syndrome

References

1) British Committee for Standards in Haematology, Blood Transfusion Task Force (2001) Guidelines for clinical use of red cell transfusions. British Journal of Haematology. 113, 24-31. (www.bcshguidelines.com).
2) The Association of Anaesthetists of Great Britain and Ireland (Sep 2001) Blood Transfusion and the Anaesthetist – Red cell Transfusions. (www.aagbi.org).
3) Serious Hazards of Transfusion, Annual Reports 1996-2001. (www.shotuk.org).
4) Handbook of Transfusion Medicine, 3rd ed. (2001). The Stationary Office. Access to full text available on www.transfusionguidelines.org
5) Mortimer P. Making Blood Safer. BMJ 2002;325:400-1
6) Department of Health, Better Blood Transfusion-Health Services Circular (HSC 009/2002) www.doh.gov.uk/bbt2
7) Herbert et al 1999 – Canadian Critical Care Trial Group, randomised, controlled (n=838) NEJM, 340, 409-417.
8) Vincent JL et al, Sep 2002 – Western European, multi-centre, prospective observational study (n= 3543)- JAMA 2002; 288: 1499-507
9) The Sanguis Study Group, Transfus Med1994; 4:251-268
10) NICE Guideline NG24

Equality Impact Assessment Test for Relevance

Race, Religion/Belief, Disability, Gender, Age and Sexual Orientation

Name of the Service/Policy/Function: Blood Transfusion Policy

1. What you are trying to achieve in this service/policy/function

(Write short notes to explain the policy/service)

To ensure safe, current practice in prescribing, obtaining blood sample, collection and administration of blood products.

2. Which population groups the service/policy/function is intended to benefit and how?

All

3. Related policy areas that may be affected by changes in this service/policy/function

Nill

Equality Impact Assessment Test for Relevance

Race, Religion/Belief, Disability, Gender, Age and Sexual Orientation

Name of the Service/Policy/Function Incident Reporting Policy

<u>Question 1</u> – Screening

For each of the six equality categories, ask the questions in the table below:

Please answer Yes or No to the following questions

Question	Age	Disability	Race	Religion and Belief	Gender	Sexual Orientation
Do different groups have different needs, experiences, issues and priorities in relation to the proposed policy service?	No	No	No	Yes	No	No
Is there potential for or evidence that the proposed policy service will not promote good relations between different groups?	No	No	No	No	No	No
Is there potential for or evidence that the proposed policy service will affect different population groups differently (including possibly discriminating against certain groups)?	No	No	No	No	No	No
Is there public concern	No	No	No	No	No	No

(including media, academic, voluntary or sector specific interest) in the policy area about actual, perceived or potential discrimination against a particular population group or groups?						

If the answer to any of the above is "yes" you will need to carry out an equality assessment in the relevant equality area(s).

<u>Question 2</u> - Why have you come to these conclusions?

(Write short notes to explain why you have drawn your conclusions including any evidence (of whatever type) that you have to support your assessment).

The policy is generic. Groups like Jehovah's Witness' may have belief issues relating to this policy, but these are accounted for in this and anti-discriminatory policies. Sensitivity in this area is required..

Based on the information set out above, I have decided that an equality impact assessment is not necessary.

Signed: Diane Smith

Job title: Sister,

Directorate/Service area: Manby Ward, Louth Hospital

Date: 15/02/17

Copy of the completed form should be sent to:

1) Your Director
2) Head of Patient and Public Involvement
   Cross O'Cliff
   Bracebridge Heath
   Lincoln
   LN4 2HN

Email: public.involvement@lpct.nhs.uk