The Collection of Blood/Blood Components
Theory Booklet (version 2b)

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<th>Full Name of Member of Staff:</th>
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Author: Maria O’Connell: Specialist Practitioner of Transfusion. 
Basildon and Thurrock University Hospital NHS Foundation Trust

Version 2b
Review Jan 2015
Introduction

In November 2006 the National Patient Safety Agency (NPSA) released Safer Practice Notice 14. This document charges all NHS and independent sector healthcare organisations “to implement an action plan for competency-based training and assessment for all staff involved in blood transfusions”. In addition to passing the competencies, practitioners need to be able to prove that they have undertaken some formal training in handling blood and transfusing blood products.

This workbook has been designed to guide you through the relevant information to enable you not only to pass your blood transfusion competencies, but also to have a more in-depth understanding as to the rationale behind these competencies. It is vital then that you undertake your own research in order to be able to complete the workbook.

All workbooks will be marked; the results will be fed back and will also be held centrally. Candidates will not be eligible to undertake the observational competency assessment until the workbook has been completed and a pass rate of 90% or more achieved. Candidates who fail to achieve 90% will be shown where they have gone wrong, and will have to re-submit the workbook.

Links to KSF- C1, C2, C3, C5, HBW 5, HBW 6, HWB 10, EF 3, G1

Collecting the blood component is a critical step in the blood transfusion process. Collecting the wrong product greatly increases the risk of a patient receiving an incorrect transfusion. Errors in collection may occur because:

- Patient ID check is not carried out properly
- Elements of the minimum dataset are missing
- The person collecting is unfamiliar with the blood component itself.

The Blood Safety and Quality Regulations 2005

The regulations set standards for quality and safety for the collection, testing, processing, storage, and distribution of blood products. They represent a more rigorous and formal approach to blood transfusion safety than any previous initiatives. It must be remembered that these regulations are law and there are strict penalties for failure to observe them.

All staff involved in collection and delivery of blood components from the storage area to the clinical area should be competency assessed to NPSA SPN 14(2006) or NHS QIS (2006) and BSQR standards

If you collect blood products you must have documented evidence of up-to-date training and competency assessment which should be at least every 3 years (from the date of passing the observational practical assessment) if you do not routinely collect blood you will need to update your training and assessment more frequently.
1) Blood Products

One source of error in blood collection stems from a lack of knowledge of the various blood components available. You must be familiar with all blood components.

Each individual component will have 2 labels attached to it, one by the NBS (National Blood Service part of the NHSBT National Health Service for Blood Transfusion) containing vital information about the component, the other applied by your Transfusion Laboratory containing patient and product information.

NBS Label on a Unit of Red Cells

Donation Number
Product type
Blood Group
Expiry Date

Once 5mls have been infused sign and complete the declaration tear off section of this label to be returned to Blood Transfusion within 48hrs of administration in order to finally fate the unit.

Patient and component details must be checked against all documents and component before removing from the laboratory. This section remains on the component at all times and discarded with the pack once used.

On Commencing the unit this section must be signed by two qualified members of staff dated and timed, place sticker in chronological order in the patient’s Health Care Records.
Pictures of Common Blood components

All Red Cells should be administered within 4 hours of removal from the designated temperature controlled storage (which runs at 4 °C ± 2°C) and connected to the patient for administration within 30 minutes of removing them from the designated controlled storage. **Blood should never be stored in the Ward, Domestic or Drug Storage Refrigerators.**

Platelets are stored at a controlled temperature 22 °C ± 2°C with continuous gentle agitation. **Platelets must not be refrigerated.** The product should be commenced as soon as possible after the component arrives in the clinical area. The purple label at the bottom of the component shows this pack has been ‘irradiated’ to protect a vulnerable patient (e.g. a patient on Fludarabine, or post bone marrow transplant, Neonates, Hodgkins Disease...)

Fresh Frozen Plasma (FFP) FFP and Cryoprecipitate is stored at -30°C for up to 2 years. FFP is stored at 4 °C ± 2°C post thawing (in a designated temperature controlled refrigerator – Blood Storage fridge) the transfusion must be completed within 24 hrs of thawing, administered within 4 hours of removal from the designated temperature controlled storage (which runs at 4 °C ± 2°C) and connected to the patient for administration within 30 minutes of removing them from the designated controlled storage.

**Cryoprecipitate** is stored at ambient temperatures in Blood Transfusion, and must be transfused within 4 hrs of thawing.

Other blood products can also be collected from Blood Transfusion such as Anti – D And clotting factors otherwise known as: Beriplex, Octoplex, Novo 7- Factor 7a Cryoprecipitate.
Q1a. Apart from Red Cells, Fresh Frozen Plasma (FFP) and Platelets, list 2 other products you may be asked to collect from the Blood Transfusion Laboratory.

a) 

b) (2)

Q1b. list differences between the storage of Red Cells and Platelets:

a). What temperature is blood stored at? And in what?

b). What temperature are platelets stored at? And in what? (4)

2) Patient ID Checks

Documentation containing the patient minimum dataset should be obtained from the clinical area. This is first name, last name, date of birth (DOB) and unique patient identification number. The product for collection should also be included and how many (i.e. red cells, platelets or FFP). These details must be complete before collection, for example on the collection slip (Green Form 295 Request For Collection of Blood components) these details are taken from the wristband attached to the patient and asking the patient to state their full name and date of birth where possible. This form must also contain the area requesting for the blood/component and the name of the person completing the 295 Green Form, these details must be written legible.

Q2a. What information is it essential to take to the blood bank (Blood fridges) to ensure collection of the correct blood component for the correct patient? (this includes main fridge on B Level and all satellite fridges (Maternity, CTC Theatres and Main Theatres)

a).  

b).  

c).  

d).  

e).  (5)
Q2b. What would you do if you were asked to collect blood/blood components without the fully completed green form (Green Form 295 Request For Collection of Blood Products) Ring the 2 correct answer(s)

a) Take another form of ID such as Drug Chart/Healthcare Records

b) Collect the blood anyway and either remember the name or write details on a scrap piece of paper

c) Refuse to collect (until staff provide you with the completed green form)

d) If you are asked to collect the ‘Flying Squad’ the green form is not required and you can collect the blood. (2)

A patient who was group O RhD positive shared the same forename and surname as a group A RhD positive patient in another ward, for whom blood had also been issued. The staff member collecting the unit, who had been trained but not competency assessed, had been given a collection slip with the patient’s full identifiers. Nevertheless, the incorrect unit was collected and the patient was not positively identified at the bedside. The group O RhD positive patient received 1 unit of A RhD positive red cells and the error was not appreciated until the second unit was required 12 hours later

Q2c. What would you do if you were unable to find the blood you were sent to collect?

a) (1)

3) Removal of Blood/Blood Components from Storage

For routine transfusions only 1 unit of red cells should be collected at a time. For emergency situations several units may be required and must be transported safely. (Staff are required to speak to the blood transfusion staff to arrange appropriate transportation.)

Once the blood component has been selected from appropriate storage, the patient minimum dataset on the collection documentation should be matched to the signing out sheet which would have been located in the folder beside the storage of the component,

- First name
- Surname
- DOB
- Patient identification number

Locate the component from the storage, ensure the traceability/compatibility label match with the signing out sheet and match with the product label, stuck to the product from the NBS. Check the condition of the pack for signs of leaking at the ports and seams, evidence of unusual discoloration or turbidity, clumps, clots or gas bubbles.
If product has been thawed check the new expiry date and time (red label stuck on the front of the product after thawing).

**Signing Out Sheet**

After removing the blood product ensure that the storage container (i.e. blood fridge, storage box, or platelet agitator) is securely shut, and ensure the platelet agitator is turned on if it was switched off.

Record the removal of the component by writing the date and time of removal on the signing out sheet beside the correct donation number of the component (only if going directly to the patient. The person collecting the product must also sign and print their name.

It is vital that your writing is clear and easy to read.

**Audit Trail**

You have to complete this section of the form if you are removing all the blood to be transferred to a satellite fridge (Main Theatres, CTC Theatres and Labour Ward- Maternity) This form will then be put in the folder beside the fridge where the blood is being stored. When removing 2 or more units to go directly to the patient’s bedside- the units would be placed directly into blood storage boxes (Polystyrene NBS boxes) and sealed by the lab staff, again this side of the form is completed, of when the blood was removed from the lab and put into this box/container. This form goes with the blood.
Q3a Why is it important to document the time, date, and name of the person removing the blood/blood component?

a)

b) (2)

4) Transfer of Blood/Blood Components to Satellite Fridges

Q4a. According to Trust policy how are blood/blood components transferred to satellite fridges. Ring the correct order of events.

a) Check the green form with the signing out sheet, remove the blood and remove and sign the back of the signing out sheet, place blood in appropriate transfer boxes, On arrival to the satellite fridge put blood in fridge and complete the back of the signing out sheet with the time date and your name before putting this form in the folder beside the fridge

b) Check Green form 295 against the white violet signing out sheet (do not continue if any miss-match) remove component and check signing out sheet match all labels on and attached to the component. Remove and complete the back of the signing out sheet with the date, time and your name. Place component in appropriate transfer box along with the signing out sheet. On arrival to the satellite fridge put components in fridge and complete the back of the signing out sheet with the time date and your name before putting this form in the folder beside the fridge.

c) Check the green form matches the signing out sheet, remove the blood and ensure all labels and documents match, remove and sign the back of the signing out sheet, place blood in appropriate transfer boxes, On arrival to the satellite fridge put blood in fridge and the signing out sheet in the folder.

(1)

Always place product(s) in appropriate transportation boxes/bags provided by Blood Transfusion, to ensure patient confidentiality, infection Control measures adhered to and concealed as some people are squeamish! Do Not transport products stored at different temperatures in the same box/bag. This box is for transport only NOT for STORAGE of blood/blood components at the patient’s bedside in an emergency or anywhere else.
5) Transportation to the Clinical Area

Blood/Blood Components should be delivered to the clinical area speedily and efficiently; the patient is at increased risk when transfusion is delayed.

They should not be out of temperature-controlled storage for longer than 30 minutes without the transfusion being commenced as the units cannot be accepted back into stock after this time. The British Committee for Standards in Haematology Guidelines 1999 state, that it must be commenced within 30 minutes to minimize the risk of bacterial proliferation.

The Blood/Blood Component should never be left unattended. Ensure that the Blood/Blood Component is actually handed to a member of staff who is designated to administer the transfusion. (Preferably the member of staff who requested it)

Q5a When transporting Blood/Blood Components to your clinical area why does it need to be concealed?(out of sight)

a) 

b) 

c)  

(3)

Q5b Is it safe to store Blood/Blood Components in the Ward Fridge/Domestic Fridge/Drug Fridge?

(ring the correct answer)

TRUE / FALSE

Why?

(2)

Q5c In what circumstances would you leave the Blood/Blood Component in an unattended area? (not in a safe/locked temperature controlled storage)

a) 

(1)
6) Return of Blood/Blood Components

If there is likely to be a delay in starting the transfusion then the blood components should be returned to the blood fridge/designated storage within 30 minutes.

Ensure all documents are checked and match.

The time and date of return should be entered on the component signing out sheet beside the removal entry. It is good practice to print name and designation as well as signature.

If the component is returned after 30 minutes out of controlled temperature storage, it should be handed to a member of laboratory staff who will record this and discard the unit. (Your department will be cross charged for this wastage).

Q6a If you are returning Blood/Blood Components within 30 minutes of removing them from the fridge what would you need to do? ring the correct sequence of events

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<tr>
<td>a)</td>
<td>Return the components and give to the member of staff in the lab.</td>
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b) Return the component to the fridge where it was taken from, check the removal time, check all the details and labels and donation number match on the signing out sheet, the blood bag label and label attached to the unit of blood, sign date and time next to the correct donation number and put the blood back in the fridge.

c) Return the component back to the fridge where it was taken from and sign date and time that you have put the unit of blood into the fridge.

6b) when returning the unit of blood/blood Component which you have not used, when checking the signing out sheet you notice it was removed over 30 minutes before what would you do with the unit of blood?

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(1)
6) Bulk Transportation to a Clinical Area in an Emergency.

If you are required to collect 2 or more units of blood to go directly to the patient’s bedside (in the event of the patient active bleeding in an emergency situation) you will need to contact the Blood Transfusion staff to ensure correct packaging and documentation of the blood (Red NBS polystyrene boxes) once sealed correctly the blood can be stored for up to 3 hours, however once this box has been opened the same rules apply and the blood needs to be commenced within 30 minutes or returned to the lab ASAP if it is not going to be used. Staff administering blood will check and sign the blood out next to the donation number as if they were removing the blood/blood product from storage to be directly administered to the patient. This completed signing out sheet is then returned ASAP back to the lab after the event.

**Platelets and cryoprecipitate should never be cooled.**

A record should be made of the date and time of packing the NBS red box so that unused units can be returned to blood bank within the timescale specified within the Trust.

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<th>Answer</th>
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<td><strong>Q7</strong> If you are required to collect more than 2 units of blood to go directly to the patient’s bedside you will need to speak to a member of staff in the Blood Transfusion Lab</td>
<td>(ring the correct answer)</td>
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<td><strong>TRUE / FALSE</strong></td>
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<td><strong>Why?</strong></td>
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In an emergency when the patient’s blood group is unknown, only O Negative red cell units can be transfused. These units are always available should they be required. (sometimes, in very short supply) An example of when they may be needed would be a patient arriving in the A&E department after a road traffic accident, who is bleeding and unconscious. In these situations no formal patient ID documentation is required although the signing out sheet the compatibility/traceability label and the NBS label on the blood pack must all match (although you do not have your patient’s details printed on the labels you would still need to check the full name, DOB, Hospital Number that are printed on them all match. e.g the full name would read ‘Flying Squad’) before you sign the blood out on the signing out sheet.

The transfusion laboratory should be informed immediately of the destination of the units and should advise the clinical area of a need for a transfusion sample. Before returning the traceability declaration label to Blood Transfusion please ensure you write the patient details on to the label. (Flying Squad blood only has this label on it, it does not have the patient details already printed on the compatibility/traceability label).

Q8 These questions relate to the collection of the flying squad Blood

a) Where is the flying Squad blood stored?

b) What details are checked to ensure you are collecting the correct unit bearing in mind patient details are not on the flying squad blood label, name 9 items


c) Where would you document (sign, date and time) the removal of this blood?

d) Is it necessary to write the ward/location on the signing out sheet and inform the lab?

e) What do you need to take from the patient and send to the lab urgently?

f) Before you return the traceability tag to the blood transfusion department what do you need to do?
If you should require any advice or assistance regarding blood/blood component collection please contact the following people:

Maria O’Connell
Julia Harvey
David Green
Annette Nethersole
David Stokes

As Below
Ext 8115
Chief Ext 4989
Senior BMS 3535
Manager (only if unable to contact any of the above)

OUT OF HOURS CONTACT
Major Haemorrhage Line
Ext 7080
Ext 7080

Acknowledgements

Maria O’Connell, Specialist Practitioner of Transfusion.
Basildon & Thurrock University Hospitals NHS Foundation Trust.
Email: maria.o’connell@btuh.nhs.uk
Telephone: 01268 524900 Ext 8114
Bleep 6271

References:

British Committee for standards in Haematology (BCSH) December 2009

Guidelines for the administration of blood and blood components and the management of transfused patients. Transfusion Medicine;9,227-239
http://www.bcsheidelines.com

http://www.transfusionguidelines.org.uk/

Serious hazards of Transfusion (SHOT), Report (2010)
http://www.shotuk.org/

Blood/Blood Product(s) Collection Procedure

Management of Blood Transfusion Practice Policy

Blood Handling Procedure