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	<b>Approval</b>	Debbie Seals	<b>Date of Issue</b>	14/05/2024	
	<b>Author</b>	Emma Stansfield	<b>Frequency</b>	Annually	

Date of Review	Signed By	Date of Review	Signed By	Date of Review	Signed By	Date of Review	Signed By

## Transfusion User Guide

Amendments highlighted


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### Contact details of key members of staff

Contact	Name	Telephone	E-mail
Blood Transfusion Laboratory manager	Emma Stansfield	x 3287	<a href="mailto:emma.stansfield1@nhs.net">emma.stansfield1@nhs.net</a>
Senior BMS Transfusion	Halima Zameer	x 3287	<a href="mailto:halima.zameer@nhs.net">halima.zameer@nhs.net</a>
Transfusion Practitioner	Sharon Jackson	x 3055 (Bleep 12575)	<a href="mailto:sharon.jackson@nhs.net">sharon.jackson@nhs.net</a>
Deputy Transfusion Practitioner	Lorna Diggory	x 3055 (Bleep 12832)	<a href="mailto:lorna.diggory@nhs.net">lorna.diggory@nhs.net</a>
Consultant Haematologist (Transfusion Lead)	Dr Samar Kulkarni	x 3228	<a href="mailto:samar.kulkarni@nhs.net">samar.kulkarni@nhs.net</a>
Head of Engagement/Deputy Head of Service	Debbie Seals	x 3167	<a href="mailto:deborah.seals@nhs.net">deborah.seals@nhs.net</a>

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### The location of the laboratory

The Transfusion laboratory is situated within the Pathology Department (Department 45) located at the Wilmslow Road end of the 1<sup>st</sup> floor corridor, above main out-patients. Follow signs for Pathology.

The contact number for the department is **0161 446 3287**.

### Times of opening of the laboratory

#### Mon – Fri

07:00 – 08:30 – Limited service

08:30 – 17:00 – Routine service

17:00 – 21:00 – Limited service

21:00 – 07:00 – Out of hours (urgent requests for the immediate management of the patient only)

#### Sat/Sun

08:00-17:00 - Limited service

17:00 – 08:00 – Out of Hours (urgent requests for the immediate management of the patient only)

### Details of out of hours service


The out of hour's service is for urgent work required for the immediate management of the patient. The following services are available:

- Group and **Screen** (G & S) – for patients where group is unknown who require blood products (except albumin)
- Crossmatching - **ONLY** performed for those patients undergoing emergency surgery, who are bleeding or are emergency cases with haemoglobin < 8.0g/L.
- Routine crossmatches for theatre the following day and routine top up transfusions with haemoglobins of >9.0g/L will **NOT** be performed.
- Provision of blood products (platelets, FFP, cryoprecipitate) for urgent cases in line with current guidelines.

The Biomedical Scientist **MUST** be contacted on 07387140948 if Blood/Blood Products are required between 21:00 – 07:00. Requests that are sent for provision of products outside of this time do not require pre-notification.

Please send blood transfusion samples via the pneumatic tube system to reception number 111 or 222; in urgent cases it is advisable to hand deliver the sample to pathology reception.


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### Services offered by Blood Transfusion Laboratory

BLOOD TRANSFUSION TEST	SPECIMEN REQUIRED	SPECIAL INSTRUCTIONS	KEY FACTORS AFFECTING TEST PERFORMANCE OR INTERPRETATION
Group and Screen	4.5 ml EDTA Light <b>Blue</b> top	Refer to section 'Instruction for requesting tests'	Haemolysed, clotted and lipaemic samples are unable to be tested
Antibody Panel Interpretation	4.5 ml EDTA Light <b>Blue</b> top	If confirmation is required by NHSBT an extra 2 x 4.5ml EDTA samples will be required	
Direct Coombs Test and Monospecific Direct Coombs Test	4.5 ml EDTA Light <b>Blue</b> top Or 3.4 ml <b>Red</b> top EDTA		Sample less than 24 hours old required
Issue of red cells	Sample within 72 hours of planned transfusion	New patients will require two independent group and screens before blood can be issued	
Transfusion Reaction Investigation	Implicated unit with giving set attached 2 x post transfusion group and screen (4.5ml EDTA <b>Blue</b> top) 1 x 3.4 ml <b>Red</b> top EDTA (for FBC – use a separate haematology request form) 1 x 4.9ml serum (clotted) sample ( <b>White</b> top) Microbiology samples if required	Telephone laboratory to inform them prior to sending  Transfusion reaction must be recorded on CWP as a reaction	
Issue of platelets	No sample required <b>UNLESS</b> the patient is new and 2 x separate group and screen samples required		
Issue of HLA platelets	Patient requires HLAAB screen/type prior First request must be made by medic	<b>24 hours' notice is required</b>	<b>Note: Cannot guarantee that platelet will be available on the same day (especially if short notice)</b>
Issue of FFP and Cryoprecipitate	No sample required <b>UNLESS</b> the patient is new and 2 x separate group and screen samples required		
Issue of Albumin	No sample required		
Issue of specialised blood products (named patients only)		Discuss with blood transfusion laboratory. <b>These will NOT be available on the same day.</b>	


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### Referred Tests

TESTS REFERRED TO OTHER HOSPITALS TEST	SPECIMEN REQUIRED	SPECIAL INSTRUCTIONS	REFERRED TO
Alloantibody Investigation	2 x 4.5ml EDTA (Blue Top)	Use NHSBT request form 1a (completed by laboratory staff)	Liverpool NHSBT
ABO/Rh grouping problems	2 x 4.5ml EDTA (Blue Top)	Use NHSBT request form 1a (completed by laboratory staff)	Liverpool NHSBT
Extended RBC phenotype	2 x 4.5ml EDTA (Blue Top)	Use NHSBT request form 1a (completed by laboratory staff)	Liverpool NHSBT
NHSBT Crossmatching	2 x 4.5ml EDTA (Blue Top)	Use NHSBT request form 1a (completed by laboratory staff)  <b>24 hours' notice is required.</b>	Liverpool NHSBT  <b>Note: Cannot guarantee that blood will be available on the same day (especially if short notice)</b>
Autoimmune haemolytic anaemia/positive DAT	2 x 4.5ml EDTA (Blue Top)	Use NHSBT request form 1a (completed by laboratory staff)	Liverpool NHSBT
Investigation of platelet refractoriness	2 x 4.5ml EDTA (Blue Top)	Initial investigation requires an HLA type and antibody screen	Barnsley NHSBT
HLA Type Class I	1 x 4.5ml EDTA (Blue top)	Use NHSBT request form 3A (Contact transfusion laboratory for form if required)	Barnsley NHSBT
HLA specific antibody screen	1 x 4.9ml serum (clotted) sample (White top)	Use NHSBT request form 3A (Contact transfusion laboratory for form if required)	Barnsley NHSBT
TRALI Investigation	Pre-transfusion sample 1 x 4.5ml EDTA (Blue top) 1 x 4.9ml serum (clotted) sample (White top)	Use NHSBT request form 3A (Contact transfusion laboratory for form if required)	Barnsley NHSBT
Platelet refractoriness ( <b>due to HPA</b> )	1 x 4.9ml serum (clotted) sample (White top) 1 x 4.5ml EDTA (Blue top)	HLA antibody investigation must be carried out first	Bristol NHSBT
Heparin Induced Thrombocytopenia (HIT)	1 x 4.9ml serum (clotted) sample (White top)		Bristol NHSBT <b>NOTE: Samples MUST be received within 72 hours</b>

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### Consent

It is the responsibility of the requesting clinician to obtain consent from the patient for the collection of blood specimens. For certain tests (e.g. genetic testing) a consent form may be required in addition to the request form.

Further guidance: [The Christie NHS Foundation Trusts Consent policy](#)

Joint United Kingdom Blood Transfusion and Tissue Transplantation Services Professional Advisory Committee: <https://www.transfusionguidelines.org/transfusion-practice/consent-for-blood-transfusion-1>

### Instructions for requesting Tests

#### Patient preparation and blood sampling:

Further guidance:

HIVE – Transfusion department

[Patient Identification Policy](#), [Venepuncture policy](#), [Transfusion Policy](#)

#### Request Form

Blood transfusion request forms **MUST** be completed and signed by a qualified medical practitioner, nurse clinician/practitioner or specialist nurse who has received the trust training by the transfusion practitioner.

As a minimum the following information must be completed on the form:


- The use of an addressograph label is mandatory and must show the patients full name, hospital number and date of birth
- Ward/location
- Diagnosis/reason for request
- Indicate product if required
- Date and time when the product is required
- Any special requirements (Irradiated, HLA matched)
- Name of the requesting medical practitioner, nurse clinician/practitioner or specialist nurse
- Contact number
- Haematological disorders (e.g. Sickle Cell Disease, Thalassemia)

#### The Sample

Details of specimen type and volume required are shown in the services offered and referred test tables. **Samples must be delivered to the lab on the same day they are taken.**

**The use of addressograph labels on specimen bottles is prohibited; samples with an addressograph will not be accepted.**

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All samples **MUST** be handwritten and labelled with:

- Patient full name spelt correctly
- Hospital number
- Date of birth
- Date sample taken (six digit format dd-mm-yy)
- Signature of person taking the sample
- Time taken

In addition:

- Samples should be taken using a 4.9ml EDTA (blue top) tube
- Blood **MUST** only be taken from one patient at a time
- The sample **MUST** be labelled at the bedside
- Do **NOT** pour samples taken in an incorrect tube into a correct one
- Do **NOT** use pre-labelled tubes

#### **Non-compliance:**

1. Unlabelled specimens and those with an addressograph label will be discarded and the ward informed and a repeat sample requested.
2. There is zero tolerance for mislabelled samples in blood transfusion. Incorrectly or inadequately labelled specimens will be discarded. The ward will be informed and a new sample requested.
4. Haemolysed samples are unable to be tested and will be discarded. The ward will be informed and a new sample requested.

#### **Second Sample Rule**


The British Society of Haematology (BSH) Guidelines for pre-transfusion compatibility procedures in blood transfusion recommend a second sample should be requested for confirmation of the ABO group of a first-time patient. All new patients **MUST** have a second 'independent' group and screen sample. **The timing of these samples must be at least 5 minutes difference to the original sample.**

Refer to **Guidelines for pre-transfusion compatibility procedures in blood transfusion laboratories** **EXT-BB-CPP-Guidelines for Pre-Transfusion Testing or Pre-Transfusion Compatibility Procedures in Blood Transfusion Laboratories (b-s-h.org.uk)**

#### **Timing of samples for Crossmatching**

In line with the BSH guidelines, if a patient has been transfused within the last 3 months or is pregnant crossmatching should be performed using a sample no more than 3 days in advance of the actual transfusion. This 3 day rule includes the

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dereservation period (E.g. if the sample is 1 day old blood would have to be transfused within 2 days).

Where there has been no transfusion within 3 months or pregnancy the sample is valid for 7 days.

### **Urgent Samples and Massive Blood Loss**

It is recommended that if a sample is urgent or in an emergency situation the samples should be hand-delivered to pathology reception.

Massive blood loss is defined as the loss of one blood volume within a 24 hour period, (around 70ml/kg, >5 litres in a 70kg adult) (Mollison et al, 1997) or a rate of loss of 150mls/min (Fakhry & Sheldon, 1994).

In the event that a patient requires a massive transfusion the blood transfusion department must be informed immediately by a nominated contact from the cardiac arrest/emergency response team and the MBL protocol is triggered. **The transfusion lab has a dedicated MBL phone number 07977 808 546.**

Two units of Emergency O Negative blood are located in the blood issue fridge (blood transfusion department), theatre fridge and **theatre 8&9 fridge.**

On initiation of the MBL protocol, blood transfusion will prepare MBL pack 1 which consists:

- 4 units Group Specific red cells (uncrossmatched) – ready within 20 minutes
- 4 units FFP – ready within 1 hour
- 1 unit of platelets

If further components are required, contact blood transfusion and MBL Pack 2 will be prepared and issued (same as above).


Please telephone Blood Transfusion with 'stand down' for the MBL episode.

### **Sample/Request Turnaround Times (TATs)**

**These TATs are based on audited evidence of previous samples and requests documented in Q pulse. The Transfusion laboratory will maintain every effort to keep to these TATs but unforeseen issues can sometimes cause these to take longer than the documented time.**

1. Routine: Crossmatched blood (group known)  $\leq$  120 minutes
2. Crossmatched blood (group not known)  $\leq$  120 minutes
3. Urgent: Crossmatched blood (group known)  $\leq$  45 minutes
4. Crossmatched blood (group not known)  $\leq$  60 minutes
5. Uncrossmatched O-blood in emergency – IMMEDIATE
6. Uncrossmatched blood (group known)  $\leq$  15 minutes
7. Uncrossmatched blood (group not known)  $\leq$  25 minutes

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### **CWP Prescription**

All blood products should be prescribed on CWP. When the products have been issued by blood transfusion laboratory the status will be updated on CWP as 'ready for collection'. The products can then be tele tracked by the ward for collection.

Further guidance: [Electronic Prescribing](#)

### **Transfusion Reaction**

If an adverse reaction to a blood product is suspected the blood transfusion laboratory should be informed by telephone. All transfusion reactions should be documented on CWP and the following sent to the transfusion laboratory:

- Transfusion request form (with addressograph label)
- The donor pack causing the suspected transfusion reaction with the giving set attached
- Any other empty donor packs from the same transfusion episode that are still available
- Two group and save samples (4.9ml EDTA Blue top)
- One clotted sample (4.9ml White top)
- One FBC (3.4ml Red top) – with haematology request form
- Blood cultures if suspected bacterial contamination – with microbiology request form
- MSU if haematuria detected

Transfusion Reaction Investigation samples **MUST** be hand delivered to pathology reception.

### **Instruction for transportation of samples**


Various personnel within the Trust will be involved in transport of specimens to and from the laboratory either by hand or via the POD system. In order to protect theirs and others safety the following guidelines should be followed:

Cover any cuts and grazes with a waterproof dressing. Touch specimen containers as little as possible, washing hands as soon as practicable afterwards. Diagnostic samples must be sealed in the plastic bag attached to the request form. Carry all specimens in the trays or boxes, where provided, never in pockets. If a specimen leaks into a tray or box, tell the laboratory reception staff and ask them to make it safe.

If a specimen is dropped or broken, do not touch it or try to clear up the mess. Stay with the specimen to prevent other people touching it and send someone to the laboratory for help. If you spill the specimen onto your overall, you must remove it at

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once and then wash your hands and put on a clean overall. Report the accident to a supervisor as soon as possible. Handle specimen containers gently at all times.

Do not send blood transfusion reaction investigations via the POD system, these must be hand delivered.

Do not send Covid-19 positive samples via the POD system. These must be double bagged, Covid positive written on the request form and hand delivered to pathology reception.

### Reporting of Results

Results are transmitted to the Clinical Web Portal (CWP). Results are not printed on paper form and are not telephoned.

NHSBT referral results will be uploaded to CWP on the patient record from Sp-ICE. Patients with antibody cards will be printed off and sent to the consultant secretary requesting the test to give to the patient.

Whilst internal and external quality assurance programmes are in operation to ensure accuracy and precision of results, occasionally random errors may occur and escape detection.

### Uncertainty of measurement

All results are subject to a degree of uncertainty of measurement. This may be due to a range of factors, including:

- Biological variation within individuals
- Analytical measurement imprecision
- Pre-analytical factors

If you require more information regarding the effects of these factors on the outcome of an individual test result please contact the lab on ext 3287.

### Clinical advice and interpretation


Clinical advice on examinations and interpretation of results is available by contacting the Consultant Haematologist Transfusion Lead (Dr Kulkarni), senior member of the Blood Transfusion laboratory or Transfusion Practitioners.

### Comments/Complaints Procedure

Any complaints or concerns about any aspect of the service should be raised initially with the Head of Engagement/Deputy Head of Service, Debbie Seals.

We are keen to know about any problems arising from the laboratory service. Feedback from our users will help in our constant efforts to improve our service.

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**Data Protection**

All staff comply with The Trust Information Governance Policy for handling of patient confidential information.

**Quality assurance and Accreditation**

The department participates in internal quality control (IQC) and external quality assurance (EQA) for all the tests undertaken within the laboratory. Performance is monitored and subject to rigorous control, to ensure that analyses are accurate, precise and results are comparable with other laboratories. **The department is also a member of the Hospital Transfusion Committee (HTC) which meets every quarter and the Hospital Transfusion Team (HTT) which meets monthly; to discuss ongoing issues and implementation of national recommendations.**

Details of the laboratory UKAS accreditation status can be found at the link below by searching our customer number **8697**:

<https://www.ukas.com/search-accredited-organisations/>

The lab also regularly monitors the accreditation status of the referral laboratories used for specialist testing.

**Names and addresses of referral laboratories**

**Liverpool NHSBT**

14 Estuary Banks  
 The Estuary Commerce Park  
 Speke  
 Liverpool  
 Telephone: 0151 268 7170


**Barnsley NHSBT**

Unit D  
 Capitol Way  
 Dodworth  
 S75 3FG  
 Telephone: 0122 686 8061

**Bristol NHSBT**

500 North Bristol Park  
 Northway  
 Filton  
 Bristol  
 BS34 7QH  
 Telephone: 0117 912 5724

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<b>Useful Links</b>
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BSH Guidelines [BSCH Guidelines](#)  
 Blood Transfusion Policy [Transfusion Policy](#)  
 Synlab group [Privacy policy](#)

<b>11. Document Locations</b>
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Hard copies are issued to the following locations:	1. Blood Transfusion
Electronic Version	1. Blood Transfusion Intranet Site
<b>Any other printed copies of this document are unauthorised.</b>	

<b>12. Procedure Amendments</b>
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This replaces all previous versions of the document.

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