Form No. 15, LF-C-BTR-BRECORD, Rev. 5, Issued Feb. 2022

CUH Ospidéal Ollscoil Chorcaí Cork University Hospital | IRELAND SOUTH WOMEN & INFANTS DIRECTORATE | UCC University College Cork, Ireland Coláiste na hOllscoile Corcaigh | HSE

Cork University Hospital & Cork University Maternity Hospital
Blood Component/Product Prescription & Transfusion Record

Use for Paediatric or Obstetric Patients Only.

(Use Form No. 15A for adult and non-obstetric patients.)

First Name: ____________________

Surname: ____________________

MRN: __________ DOB: __________

Ward: ____________________

Transfusion Associated Circulatory Overload (TACO) Risk Assessment Tool for Red Cell Transfusions in Non-Bleeding Patients

Does this patient have any of the following risk factors?

- Does the patient have a diagnosis of '**heart failure**', **congestive cardiac failure**, severe **aortic stenosis** or moderate to severe **left ventricular dysfunction**?
- Is the patient on a **regular diuretic**?
- Does the patient have severe **anaemia**?

- Is the patient known to have **pulmonary oedema**?
- Does the patient have **respiratory symptoms** of undiagnosed cause?

- Is the **fluid balance** clinically significantly positive?
- Is the patient on concomitant **fluids** (or has been in the past 24 hours)?
- Is there any **peripheral oedema**?
- Does the patient have **hypoalbuminaemia**?
- Does the patient have significant **renal impairment**?

(Seek advice from senior medical staff, if necessary.)

If the patient has any risk factors:

1
- Review the need for the transfusion: do the benefits outweigh the risks?

2
- Can the transfusion be safely deferred until the issue can be investigated, treated or resolved?

3
- Consider body weight dosing (especially for adults <50 Kg & children <40 Kg).
- Transfuse one unit (red cells) and review symptoms of anaemia.
- Measure the fluid balance.
- Consider a prophylactic diuretic.
- Transfuse at a slower rate, over a maximum of 4 hours.
- Monitor the vital signs closely.

Due to differences in adult and neonatal physiology, babies may have a different risk for TACO. Calculate the dose by weight and observe the notes above. *(This Risk Assessment tool was created by the Serious Hazards of Transfusion (SHOT) group in the UK.)*

Single Unit Prescription & Transfusion

- Stable normovolaemic **non-bleeding adult** inpatients who require transfusion should initially be prescribed a **single unit of RCC**, as this is often sufficient to relieve acute symptoms of anaemia and/or sufficiently raise their haemoglobin so that further transfusion may be unnecessary or can be replaced by an alternative treatment (e.g. oral or IV iron).
- **1 RCC** typically increases the haemoglobin of a **70 Kg** person by **1 g/dL**, so the increase will be greater for people with a lower body weight.
- After transfusion, re-assess the patient clinically (+/- check their Hb) to determine if further transfusion is required.
- In stable non-bleeding patients, the FBC can be checked ≥10 minutes after transfusion completion.
- Prescribe each unit on a separate line in the prescription panel below.
- To cancel a prescription, draw a line through the relevant prescription, then sign and date the cancellation.
- Remember: **Don't Transfuse Two, if One will do!** x 1

Prescribed on: Date	Prescribed on: Time	Blood Component or Product Prescribed:	Special Requirements: * (Refer to Page 9, then circle as appropriate)			Risk of TACO?		Number of units/Volume (See pg. 2 & 3)	Prophylactic Drug Therapy Prescribed? (Please circle)		Rate / Duration of Transfusion (See pg. 2 & 3)	Has the patient received the patient information leaflet? (Circle as appropriate)		Doctor's signature	IMC number	Bleep no. / Contact details	Transfused? (Tick when prescription fulfilled)
			CMV Neg	Irradiated	None	Yes	No		Yes	No		Yes	Received previously				
			CMV Neg	Irradiated	None	Yes	No		Yes	No		Yes	Received previously				
			CMV Neg	Irradiated	None	Yes	No		Yes	No		Yes	Received previously				
			CMV Neg	Irradiated	None	Yes	No		Yes	No		Yes	Received previously				
			CMV Neg	Irradiated	None	Yes	No		Yes	No		Yes	Received previously				
			CMV Neg	Irradiated	None	Yes	No		Yes	No		Yes	Received previously				
			CMV Neg	Irradiated	None	Yes	No		Yes	No		Yes	Received previously				
			CMV Neg	Irradiated	None	Yes	No		Yes	No		Yes	Received previously				

* For special requirements other than irradiated or CMV negative (e.g. HLA matched; washed components etc.), please seek consultant haematologist advice.

For guidance on prescribing blood components/products, including special requirements, refer to PPG-CUH-CUH-30 on QPULSE.

Prescribe Red Cells (RCC / PC), Platelets (Plt), Solvent Detergent Plasma (SDP), Fibrinogen, Albumin (Alb), Prothrombin Complex Concentrate (PCCs), Immunoglobulins (IVIg) & Coagulation Factor Concentrates in this document.

Essential Information for Prescribing and Administering Blood Components/Products to Paediatric or Obstetric Patients

	Red Cell Concentrate (RCC)	Platelets	Solvent Detergent (SD) Plasma	Fibrinogen (RiaSTAP® 1g)
Storage	Refrigerated at 4 ± 2°C	Incubated & agitated at 22 ± 2°C **NEVER** refrigerate platelets.	Frozen until required, then refrigerated at 4 ± 2°C	Refrigerated at 2 - 8°C
Volume per unit	Full pack: 226 – 350 mL 5 split paediatric pack: 54 - 71 mL in each split.	Full pack: 220 – 340 mL Paediatric platelet aliquot: ≥ 50 mL - depending on the volume requested.	200 mL (nominal volume)	50 mL when reconstituted with sterile water.
Typical transfusion volume/dose in non-bleeding patients	**Adults:** 4 mL/Kg Single unit transfusions should be given to non-bleeding adult patients where possible. Consider weight based prescribing if the adult is **<50 Kg**. **Neonatal 'Top ups':** 10 – 20 ml/Kg, typically 15 ml/Kg or use transfusion formula below. *(BSH 2016)* **Infants & Children:** For children **< 40 Kg,** calculate transfusion volume in mL using the formula: **(Desired Hb** *[g/dL]* **– actual Hb** *[g/dL]***) x wt** *[Kg]* **x 4** The volume transfused should NOT exceed 2 g/dL above the transfusion threshold. Normal maximum transfusion volume is 1 unit. *(BSH 2016)*	**Adults:** Single unit transfusion where possible and then re-check the platelet count ≥ 10 minutes after transfusion to determine if another platelet transfusion is needed. **Neonates, Infants & Children < 15 Kg:** 10 – 20 mL/Kg *(BSH 2016)* **Children ≥ 15 Kg:** Single ABO compatible apheresis donation (approximately 300 mL). Maximum volume = 1 pack *(BSH 2016)*	**Adults:** Dosage depends on patient's weight & clinical situation. 12-15 mL/Kg is the generally accepted starting dose. *(LG-Octaplas SPC 2019)* **Neonates, Infants & Children:** 12 – 15 mL/Kg **Adults, Neonates, Infants & Children:** Dosage for plasma exchange: Seek advice from consultant haematologist.	Refer to product insert and to PPG-CUH-CUH-209 on QPULSE for advice on dosage. **Obstetric patients:** In the event of haemorrhage, administer fibrinogen promptly & maintain levels **>2.0 g/L.** **Non-obstetric adult patients:** In the event of haemorrhage, maintain levels **>1.5 g/L**. **Neonates, Infants & Children:** In the event of haemorrhage, maintain levels **>1.5 g/L**.
Expected increment/unit	4 mL/Kg increases Hb by approximately 1g/dL. *(BSH 2017)* 1 unit increases Hb of a **70 Kg adult** by approximately 1 g/dL.	1 unit increases platelet count of a **70 Kg adult** by approx. 20 – 40 x 10^9/L	Depends on clinical indication, pre- and post-transfusion coagulation tests and clinical response. After transfusion, repeat coagulation tests to determine if further doses are required.	Depends on clinical situation – refer to product insert and to PPG-CUH-CUH-209. After administration, re-check patient's fibrinogen level.
Transfusion Rate/Duration (non-emergencies)	**Adults:** 2 – 5 mL/Kg/hr Routine administration for adult patients **NOT** at risk of TACO is 90 – 120 minutes/unit *(BSH 2017)*. If at risk of TACO, transfuse over a longer period, up to a maximum of 4 hours. **Neonates, infants & children >1 year old:** 2 – 5 ml/Kg/hr (usual maximum rate = 150 mL/hr) *(BSH 2016)* **All Patients:** Rapid transfusion may be appropriate in the management of major haemorrhage *(BSH 2017).*	**Adults:** Typically administered over 30 – 60 minutes per adult therapeutic dose (ATD) (*i.e.* 1 unit). *(BSH 2017)* **Neonates, infants & Children:** 10 – 20 mL/Kg/hr *(BSH 2016)*	**Adults:** 30 – 60 minutes per 200 mL or 10 - 20 mL/Kg/hr **Neonates, Infants & Children:** 10 - 20 mL/Kg/hr *(BSH 2016)* **All Patients:** Transfuse patients at risk of TACO at a slower rate. Rapid transfusion may be appropriate during major haemorrhage, but the rate **must NOT exceed 1 mL/Kg/min**, as can cause citrate toxicity. *(LG-Octaplas SPC 2019)*	Refer to product insert and to PPG-CUH-CUH-209 on QPULSE. Administer slowly at a rate which the patient finds comfortable and which does **NOT** exceed 5 mL/min.

	Red Cell Concentrate (RCC)	Platelets	Solvent Detergent (SD) Plasma	Fibrinogen (RiaSTAP® 1g)
Administration Equipment	**Adults:** Standard blood administration set with an integral 170 – 200 µm filter. Administered using an approved CE marked infusion pump or gravity. **Neonates, infants & children:** Paediatric/Neonatal blood administration set with a 170 – 200 µm filter.	Platelet or standard adult / paediatric / neonatal blood administration set with an integral 170 – 200 µm filter. Platelets should **NOT** be administered through an administration set previously used to transfuse red cells.	Standard blood administration set with an integral 170 – 200 µm filter. Red blood cells and plasma may be given through the same administration set *(BSH 2017).*	IV injection or infusion using a syringe pump and a standard infusion set.
Commence within:	30 minutes of removal from blood fridge/igloo.	Immediately on receipt for maximum efficacy.	Immediately on receipt for maximum efficacy.	As soon as possible on receipt.
Complete transfusion within:	Must be completed within 4 hours of 'spiking' the pack and/or 4 ½ hours of removal from the blood fridge/igloo, whichever is sooner.	Must be completed <4 hours of 'spiking' the pack and within 8 hours of removal from agitator in laboratory, whichever is sooner. *(NHO communication & BSH, 2017)*	Must be completed within 4 hours of 'spiking' the pack and/or 8 hours of removal from the blood fridge/igloo, whichever is sooner.	Once reconstituted, administer immediately. If a delay occurs, keep at room temperature (≤25°C) & discard after 8 hours.
Miscellaneous:	Blood warmers should **ONLY** be used if a patient has a clinically significant cold antibody; during rapid transfusion; during elective/emergency surgery or for neonates/infants undergoing a constant rate exchange transfusion *(JPAC 2014 & BSH, 2016)*	Platelets may **NOT** be available onsite, so allow time for ordering & transport from the IBTS. HLA or HPA matched platelets require special order from the National Blood Centre in Dublin.	SD Plasma must be ABO compatible (RhD type is irrelevant). Allow at least 30 minutes for thawing and issuing. Due to the large volumes required to produce haemostatic benefit, patients must have careful haemodynamic monitoring to prevent TACO (JPAC, 2014)	Do **NOT** store reconstituted RiaSTAP® in a fridge.

General Information:

- RCC, platelets and plasma can be administered through peripheral IV cannulae and most central venous access devices (according to manufacturer's instructions), as well as intraosseously.
- The cannula size used to administer blood components depends on vein size and the rate of infusion required. There is no maximum or minimum size requirement.
- Prime and fully wet the filter of the blood administration giving-set with the blood component.
- Priming or flushing the blood administration set with 0.9% saline is **NOT** recommended. *(BSH, 2017).*
- No other infusion solutions or drugs should be added to the blood component, as this may result in haemolysis, clotting or incompatibility.
- Blood components can be transfused through one lumen of a multi-lumen catheter while the other lumina are in use. Refer to PPG-CUH-CUH-13 for further guidance on use of single/multi-lumen catheters.
- Blood administration sets must be changed:
  - If transfusing platelets
  - On completion of transfusion (or at least every 12 hours if the transfusion episode is on-going.) *(BSH, 2017).*
  - If infusing another fluid or medication after the current transfusion.

Refer to PPG-CUH-CUH-13 on QPULSE and/or to the product inserts for further information.

Blood Component Administration Process / Checklist

Before requesting collection of the component:
- Check prescription is present & correct
- Ensure patient is wearing a CUH/CUMH identification band
- Ensure I.V. access patent and equipment present
- Use BloodTrack Enquiry or contact the lab to ensure that the component/product is ready for collection
- Administer any prescribed pre-transfusion medication
- Perform baseline observations** & organise collection

On receipt, the following pre-administration checks must be performed at the patient's side by 2 staff members or by 1 staff member if using a PDA:

Ask the patient to state their full name & D.O.B. (or if they are non-verbal/confused/there is a language barrier, verify their ID with a 2nd person [nurse/midwife/doctor/perfusionist], even if using a PDA).

Are the details given by patient (Surname, Forename & DOB) plus the patient's MRN identical to the details on:
- Patient's hospital identification band,
- Compatibility tag on blood component,
- Prescription section of transfusion record?

No → **Contact the laboratory personnel**

Yes

Is the type of component/product received, the same as that prescribed? No → **Contact the laboratory personnel**

Yes

Is the ABO & RhD group on the IBTS unit label identical/compatible with the patient's ABO & RhD group printed on the laboratory compatability tag attached to the blood pack? No → **Contact the laboratory personnel**

Yes

Is the donation (unit) number on the IBTS unit label identical to that on the compatibility tag attached to the blood component? No → **Contact the laboratory personnel**

Yes

Is CMV neg and/or Irradiated blood prescribed, if so, is the blood CMV neg and/or Irradiated? No → **Contact the laboratory personnel**

Yes

Is the component within date? No → **Contact the laboratory personnel**

Yes

Has the component any unusual colour, signs of leakage/damage, tubridity, haemolysis or clotting? Yes → **Contact the laboratory personnel**

No

Is the transfusion ready to commence promptly? No → **Contact the laboratory personnel: Send component back to laboratory, as soon as possible**

Yes

Advise patient that if they experience any signs or symptoms* which may indicate a transfusion reaction, they must alert a member of staff

Repeat baseline patient observations if 60 mins have elapsed since original observations

Attach the administration set and prime it with the blood component.

Start the tranfusion, as per the prescribed infusion rate and document the start time.

Monitor the patient closely for the first 15 minutes, as serious reactions are most likely to occur during this time.

Repeat and document observations every 15 minutes for the first half hour and then hourly until completion of the transfusion

Repeat and document observations at end of transfusion Document time of completion

Is the patient to receive another unit?

No → **Dispose of empty pack and blood administration set in the 'leak proof' yellow disposal bin**

Yes → **Repeat checking procedure above for all units**

** **Observations To Be Performed AND Recorded Before, During and At End Of Transfusion**
- Temp
- Respiration
- Pulse
- Blood Pressure
- O_2 Sat

Ensure all traceability documentation for ALL blood components is FULLY completed on the Blood Component Prescription & Transfusion Record.

If the pre-administration checks were performed manually (*i.e.* the electronic blood tracking system [EBTS] PDA was NOT used), ensure that the yellow collection slip is fully completed & placed in the designated location for collection & return to the blood transfusion laboratory.

***Transfusion Reaction Signs and/or Symptoms**

Fever (Increase of 2.0°C or more or a temperature of 39.0°C WITHOUT any other symptoms OR if combined with other symptoms, an increase of >1.0°C that increases temperature to >38.0°C) / Chills / Shivering / Tachycardia /Hypo-or hypertension/ Collapse / Rigors /Flushing / Urticaria / Nausea / Vomiting / Chest or Abdominal Pain / Pain at the cannula site /Pallor/Rash/ Oedema / Low Back Pain / Bone or Muscle Pain / Shortness of Breath / Agitation or generally feeling unwell / Feeling of Doom / Respiratory Distress / Anaphylaxis / Haematuria / Diminished Urinary Output

In the event of a suspected transfusion reaction, refer to page 14 of this document for guidance.

Refer to PPG-CUH-CUH-13 on QPULSE for detailed information on the administration of blood components.

(PDA = Personal Digital Assistant, which is a handheld scanner that forms part of the Electronic Blood Tracking System [EBTS].)

Patient's Name: _____

MRN: _____ **Date Transfused:** ___ / ___ / ___

Affix Unit Peel-Away' Label (Or manually complete)

Unit Blood Group:	Component Type:	Unit No / Batch No:

Begin Transfusion

Checked & Administered by:

Signature 1: *Handwrite*

Badge/IMC No.: *or*

Begin Date: *Attach EBTS Label*

Begin Time: _____

Ward: _____

Checked by: *(If non-verbal /manual check)*

Signature 2: _____

Badge/IMC No.: _____

End Transfusion

Signature: *Handwrite*

Badge/IMC No.: *or*

End Time: *Attach EBTS Label*

Volume Transfused: _____ mL

Comments:

Observations

Time (24 Hr. Clock)								
TEMP °C 40.5								
40.0								
39.5								
39.0								
38.5								
38.0								
37.5								
37.0								
36.5								
36.0								
35.5								
BLOOD PRESSURE 210								
200								
190								
180								
170								
160								
150								
140								
130								
120								
110								
100								
90								
80								
70								
60								
50								
Pulse								
Resps								
SpO_2								
IV Site Satisfactory								
Initials								

Patient's Name: _____

MRN: _____ **Date Transfused:** ___ / ___ / ___

Affix Unit Peel-Away' Label (Or manually complete)

Unit Blood Group:	Component Type:	Unit No / Batch No:

Begin Transfusion

Checked & Administered by:

Signature 1: *Handwrite*

Badge/IMC No.: *or*

Begin Date: *Attach EBTS Label*

Begin Time: _____

Ward: _____

Checked by: *(If non-verbal /manual check)*

Signature 2: _____

Badge/IMC No.: _____

End Transfusion

Signature: *Handwrite*

Badge/IMC No.: *or*

End Time: *Attach EBTS Label*

Volume Transfused: _____ mL

Comments:

Observations

Time (24 Hr. Clock)								
TEMP °C 40.5								
40.0								
39.5								
39.0								
38.5								
38.0								
37.5								
37.0								
36.5								
36.0								
35.5								
BLOOD PRESSURE 210								
200								
190								
180								
170								
160								
150								
140								
130								
120								
110								
100								
90								
80								
70								
60								
50								
Pulse								
Resps								
SpO_2								
IV Site Satisfactory								
Initials								

Patient's Name:

MRN: _____ **Date Transfused:**___ / ___ / ___

Affix Unit Peel-Away' Label (Or manually complete)

Unit Blood Group:	Component Type:	Unit No / Batch No:

Begin Transfusion

Checked & Administered by:

Signature 1: Handwrite

Badge/IMC No.: or

Begin Date: Attach EBTS Label

Begin Time: _____

Ward: _____

Checked by:
(If non-verbal /manual check)

Signature 2: _____

Badge/IMC No.: _____

End Transfusion

Signature: Handwrite

Badge/IMC No.: or

End Time: Attach EBTS Label

Volume Transfused: _____ mL

Comments:

Observations

Time (24 Hr. Clock)								
TEMP °C	40.5								
	40.0		1						
	39.5	B	5						
	39.0	A							F
	38.5	S	M						I
	38.0	E	I						N
	37.5	L	N						A
	37.0	I	U						L
	36.5	N	T						
	36.0	E	E						
	35.5		S						
BLOOD PRESSURE	210								
	200								
	190								
	180	O	O						O
	170	B	B						B
	160	S	S						S
	150	E	E						E
	140	R	R						R
	130	V	V						V
	120	A	A						A
	110	T	T						T
	100	I	I						I
	90	O	O						O
	80	N	N						N
	70	S	S						S
	60								
	50								
Pulse									
Resps									
SpO_2									
IV Site Satisfactory									
Initials									

Patient's Name:

MRN: _____ **Date Transfused:**___ / ___ / ___

Affix Unit Peel-Away' Label (Or manually complete)

Unit Blood Group:	Component Type:	Unit No / Batch No:

Begin Transfusion

Checked & Administered by:

Signature 1: Handwrite

Badge/IMC No.: or

Begin Date: Attach EBTS Label

Begin Time: _____

Ward: _____

Checked by:
(If non-verbal /manual check)

Signature 2: _____

Badge/IMC No.: _____

End Transfusion

Signature: Handwrite

Badge/IMC No.: or

End Time: Attach EBTS Label

Volume Transfused: _____ mL

Comments:

Observations

Time (24 Hr. Clock)								
TEMP °C	40.5								
	40.0		1						
	39.5	B	5						
	39.0	A							F
	38.5	S	M						I
	38.0	E	I						N
	37.5	L	N						A
	37.0	I	U						L
	36.5	N	T						
	36.0	E	E						
	35.5		S						
BLOOD PRESSURE	210								
	200								
	190								
	180	O	O						O
	170	B	B						B
	160	S	S						S
	150	E	E						E
	140	R	R						R
	130	V	V						V
	120	A	A						A
	110	T	T						T
	100	I	I						I
	90	O	O						O
	80	N	N						N
	70	S	S						S
	60								
	50								
Pulse									
Resps									
SpO_2									
IV Site Satisfactory									
Initials									

Patient's Name:

MRN: _____ **Date Transfused:**___ / ___ / ___

Affix Unit Peel-Away' Label (Or manually complete)

Unit Blood Group:	Component Type:	Unit No / Batch No:

Begin Transfusion

Checked & Administered by:

Signature 1: Handwrite

Badge/IMC No.: or

Begin Date: Attach EBTS Label

Begin Time: _____

Ward: _____

Checked by:
(If non-verbal /manual check)

Signature 2: _____

Badge/IMC No.: _____

End Transfusion

Signature: Handwrite

Badge/IMC No.: or

End Time: Attach EBTS Label

Volume Transfused: _____ mL

Comments:

Observations

Time (24 Hr. Clock)								
TEMP °C	40.5								
	40.0		1						
	39.5	B	5						
	39.0	A							F
	38.5	S	M						I
	38.0	E	I						N
	37.5	L	N						A
	37.0	I	U						L
	36.5	N	T						
	36.0	E	E						
	35.5		S						
BLOOD PRESSURE	210								
	200								
	190								
	180	O	O						O
	170	B	B						B
	160	S	S						S
	150	E	E						E
	140	R	R						R
	130	V	V						V
	120	A	A						A
	110	T	T						T
	100	I	I						I
	90	O	O						O
	80	N	N						N
	70	S	S						S
	60								
	50								
Pulse									
Resps									
SpO_2									
IV Site Satisfactory									
Initials									

Patient's Name: _____

MRN: _____ **Date Transfused:** ___ / ___ / ___

Affix Unit Peel-Away' Label (Or manually complete)

Unit Blood Group:	Component Type:	Unit No / Batch No:

Begin Transfusion

Checked & Administered by:

Signature 1: Handwrite

Badge/IMC No.: or

Begin Date: Attach EBTS Label

Begin Time: _____

Ward: _____

Checked by:
(If non-verbal /manual check)

Signature 2: _____

Badge/IMC No.: _____

End Transfusion

Signature: Handwrite

Badge/IMC No.: or

End Time: Attach EBTS Label

Volume Transfused: _____ mL

Comments:

Observations

Time (24 Hr. Clock)								
40.5								
40.0		15						
39.5	BASELINE							FINAL
TEMP 39.0		MINUTES						
38.5								
38.0								
37.5								
37.0								
°C 36.5								
36.0								
35.5								
210								
200								
190								
180	OBSERVATIONS	OBSERVATIONS						OBSERVATIONS
170								
160								
150								
140								
BLOOD PRESSURE 130								
120								
110								
100								
90								
80								
70								
60								
50								
Pulse								
Resps								
SpO_2								
IV Site Satisfactory								
Initials								

Patient's Name: _____

MRN: _____ **Date Transfused:** ___ / ___ / ___

Affix Unit Peel-Away' Label (Or manually complete)

Unit Blood Group:	Component Type:	Unit No / Batch No:

Begin Transfusion

Checked & Administered by:

Signature 1: Handwrite

Badge/IMC No.: or

Begin Date: Attach EBTS Label

Begin Time: _____

Ward: _____

Checked by:
(If non-verbal /manual check)

Signature 2: _____

Badge/IMC No.: _____

End Transfusion

Signature: Handwrite

Badge/IMC No.: or

End Time: Attach EBTS Label

Volume Transfused: _____ mL

Comments:

Observations

Time (24 Hr. Clock)								
40.5								
40.0		15						
39.5	BASELINE							FINAL
TEMP 39.0		MINUTES						
38.5								
38.0								
37.5								
37.0								
°C 36.5								
36.0								
35.5								
210								
200								
190								
180	OBSERVATIONS	OBSERVATIONS						OBSERVATIONS
170								
160								
150								
140								
BLOOD PRESSURE 130								
120								
110								
100								
90								
80								
70								
60								
50								
Pulse								
Resps								
SpO_2								
IV Site Satisfactory								
Initials								

Guidance on use of Irradiated or CMV negative Blood Components

1. Irradiated Requirements Algorithm [1]

Has the patient **EVER** been treated with any of the following medications:
- **Purine analogues**, such as fludarabine, pentostatin (deoxycoformicin), cladribine, bendamustine and other related agents?
- **Anti-thymocyte globulin (ATG)** or other **T-lymphocyte depleting serotherapy**?
- **Alemtuzumab (anti-CD52)** for treatment of CLL/other haematological disease **ONLY**?

Yes → Irradiated blood components **required for LIFE** ^

No

Has the patient **EVER** been diagnosed with (or are they suspected of having) any of the following conditions:
- **Hodgkin Lymphoma** (any stage of the disease)?
- Severe **congenital T lymphocyte immunodeficiency syndromes**, such as Di George syndrome *(22q11.2 deletion syndrome)*, CHARGE syndrome, SCID, CVID etc.?

Yes → Irradiated blood components **required for LIFE** ^

No

Has the patient **EVER** received or are they going to receive an:
- **Allogeneic Haemopoietic stem cell (HSC) / bone marrow (BM) transplant**? *

Yes → Irradiated blood components **may be required:** ^

No

Is the patient undergoing / about to undergo / have they undergone:
- **Autologous Haemopoietic stem cell (HSC) / BM transplant**?
- **Bone marrow/peripheral blood stem cell collection** for future re-infusion?
- **Chimeric Antigen Receptor T-cell (CAR-T) re-infusion**?

Yes → Irradiated blood components **may be required:** ^

No

Is the patient a fetus / neonate / infant (≤ 1 year) who has had or is having an:
- **Intrauterine transfusion (IUT)**?
- **Neonatal exchange transfusion (ET)**?

Yes → Irradiated blood components **may be required:** ^

No

Is the patient going to receive a:
- **Transfusion from a relative** or a **HLA matched** donor?
- **Granulocyte transfusion**?

Yes → Irradiated **required** when transfusing these specific products.

No

Irradiated blood components **NOT required**, as per local policy PPG-CUH-CUH-80.
This includes patients with HIV/AIDS, acute leukaemia, non-Hodgkin lymphoma, other cancers, transient defects of T-lymphocyte function due to viral infection, aplastic anaemia patients not treated with ATG, those who have had or are awaiting solid organ transplants, those receiving alemtuzumab for MS/vasculitis/solid organ transplant, those taking rituximab and 'top up' transfusions for infants who have not had an IUT.

Irradiated blood components **required for LIFE** ^

Allogeneic HSCT/BMT: Irradiated components required from initiation of conditioning chemo/radiotherapy.

All medication/conditions: Required from starting medication/diagnosis.

Note: If awaiting confirmation of a diagnosis, please update transfusion lab staff when diagnosis confirmed.

Irradiated blood components **may be required:** ^

Autologous HSCT/BMT: If patient does not meet any lifetime criteria above, give irradiated from start of conditioning chemo/radiotherapy until 3 months post-transplant (or 6 months if total body irradiation used)

Collection of BM/Stem Cells: Irradiated components required 7 days prior to and during harvest.

CAR-T cell re-infusion: Irradiated components required from 7 days prior to harvest (incl. during harvest) until 3 months post re-infusion.

IUT: Irradiated required for IUT and ALL subsequent transfusions (incl. ET and 'top ups') until 1 year of age.

ET: If there is NO history of IUT, irradiated is recommended unless it would cause significant delay.

** The lifetime requirement for ALL allogeneic BMT/HSCT patients is a local practice, which may differ in other hospitals.*

^ In emergencies, if irradiated components are not available, non-irradiated components may be transfused to avoid delays.

2. CMV Negative Requirements Algorithm [2]

Is the patient:
- **Pregnant**?
- A **neonate / infant ≤6 months old**?
- Having an **intrauterine transfusion (IUT)**?
- Having a **granulocyte transfusion**?

Yes → CMV negative components **required** [x]

[x] In an emergency, blood of unknown CMV status may be used.

If **pregnant**: CMV negative components are not required for mother during labour or delivery.

No

CMV negative blood components **NOT required**, as per local policy PPG-CUH-CUH-80.
This includes patients who are awaiting/have had a BM/HSC transplant (irrespective of the CMV serology status of the donor/recipient); AIDS / HIV or immunodeficient patients; infants > 6 months old and those who are awaiting / have had solid organ transplants, as standard leucodepleted red cells and platelets provide sufficient protection.
(NOTE: Clinical staff should ensure that ALL potential BMT/HSCT patients are CMV screened BEFORE transfusion.)

References:
1. British Society for Haematology (BSH) guidelines on the use of Irradiated blood components, August 2020.
2. National Transfusion Advisory Group (NTAG) guidelines for use of CMV antibody screened negative (CMV negative) cellular blood components (red cells, platelets and granulocytes) in the Irish healthcare setting, September 2020.

Paediatric Major Transfusion Protocol (MTP)

PAEDIATRIC MAJOR TRANSFUSION PROTOCOL (MTP)

Acute blood loss observed/estimated > 10mls/kg

↓

Contact the Consultant Paediatric, Surgical team on call and Consultant Haematologist

↓

Call transfusion laboratory (Tel: 22537 / Bleep: 199).
Establish if valid BT specimen in laboratory and that blood may be required urgently

↓

Secure intravenous access and take blood samples for:
- Blood Transfusion Group & X/match sample if required (correctly labelled),
- FBC, Clotting Screen (include Fibrinogen), Biochemistry, VBGs

↓

Give **tranexamic acid:**
- 15mg/kg. Note: Maximum 1g.
- Consider maintenance 2mg/kg/hr infusion

Commence **fluid resuscitation:**
- 10ml/kg warmed 0.9% NaCl

↓

Is blood required STAT? (*i.e.* less than 10 minutes)?

→ **Yes** → **Request Emergency O Neg unit from BT Laboratory**
- **Child <20kg: Request one unit of RBC**
- **Child > 20kg: Request two units of RBC**

↓ **No**

Request from BT Laboratory as described below based on body weight

Child < 10kg: 1 unit RBC, 1 unit Octaplas	**Child 10-20kg: 2 units RBC, 2 units Octaplas**
Child 20-40kg: 3 units RBC, 2 units Octaplas	**Child > 40kg: 4 units RBC, 2 units Octaplas**

Transfuse RBC and Octaplas:
Administer in 10mL/kg aliquots (in total 20ml/kg).
Prescribe all transfused components as ml/kg bodyweight.
Give RCC through blood warmer.
Reassess rate of blood loss and response to treatment and repeat as necessary.

Consider:
- **Platelets** (1 unit per 4 units of RBC transfused or 5mL/kg for every 10mL/kg RBC transfused)
- **Fibrinogen concentrate 1 g** (if fibrinogen level <1.5g/L)
  If infant is **≤10kg body weight**: give 100mg/kg of Fibrinogen Concentrate.

↓

Bleeding Controlled?

→ **Yes**
- **Notify Blood Transfusion Laboratory to cease MTP.**
- **Return all unused blood products to the lab. Ensure documentation complete.**

→ **No** → (return to: Contact the Consultant Paediatric, Surgical team on call and Consultant Haematologist)

Optimise:
- Oxygenation
- Cardiac Output
- Tissue Perfusion
- Metabolic State
- Watch ECG, O_2 saturation and BP

Monitor (every 30 – 60 minutes):
- FBC
- PT / APTT / Fibrinogen
- Calcium and Magnesium
- VBG

If bleeding continues, aim for:
- Hb: > 8.0g/dL
- Platelets:
  - 50-100 x 10^9/L,
  - 100 if ICH / Life threatening bleeding
- PT/APTT: < 1.5 x normal
- Fibrinogen: > 1.5g/L
- Temperature: >35°C
- pH: > 7.2
- Base excess: < 6
- Lactate: < 1mmol/L
- Ca^{++}: >1.1mmol/L

For detailed information, refer to PPG-CUH-CUH-210 on QPULSE. Advisory services are also available from the haematology team.

Major Haemorrhage/Emergency/Batch Product Transfusion Record

Patient's Name: _____ **DOB:** _____ **MRN:** _____

This section may be used to record transfusion during **Major Haemorrhage**, in **Intensive Care**, **High Dependency**, **Theatre** or to record the administration of **Batch Products** (e.g. albumin, coagulation factor concentrates, immunoglobulins etc.).

- All procedures, including **pre-administration checks, must be adhered to** irrespective of the clinical urgency.
- **Observations must be recorded** at the recommended intervals in the anaesthetic sheet, EWS or approved IT system (e.g. ICIP).
- After the emergency, reconcile all blood components/products to **ensure that ALL unit/batch numbers have been recorded**.

Blood Component/Product Details	Begin Tx	End Tx
1. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** EBTS **Begin Date:** 'Begin' **Begin Time:** Label **2nd Checker:** *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	**Signature:** _____ **ID Badge/IMC No.:** EBTS **End Time:** 'End' **Volume Transfused:** Label mL
2. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** EBTS **Begin Date:** 'Begin' **Begin Time:** Label **2nd Checker:** *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	**Signature:** _____ **ID Badge/IMC No.:** EBTS **End Time:** 'End' **Volume Transfused:** Label mL
3. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** EBTS **Begin Date:** 'Begin' **Begin Time:** Label **2nd Checker:** *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	**Signature:** _____ **ID Badge/IMC No.:** EBTS **End Time:** 'End' **Volume Transfused:** Label mL
4. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** EBTS **Begin Date:** 'Begin' **Begin Time:** Label **2nd Checker:** *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	**Signature:** _____ **ID Badge/IMC No.:** EBTS **End Time:** 'End' **Volume Transfused:** Label mL
5. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** EBTS **Begin Date:** 'Begin' **Begin Time:** Label **2nd Checker:** *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	**Signature:** _____ **ID Badge/IMC No.:** EBTS **End Time:** 'End' **Volume Transfused:** Label mL
6. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** EBTS **Begin Date:** 'Begin' **Begin Time:** Label **2nd Checker:** *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	**Signature:** _____ **ID Badge/IMC No.:** EBTS **End Time:** 'End' **Volume Transfused:** Label mL

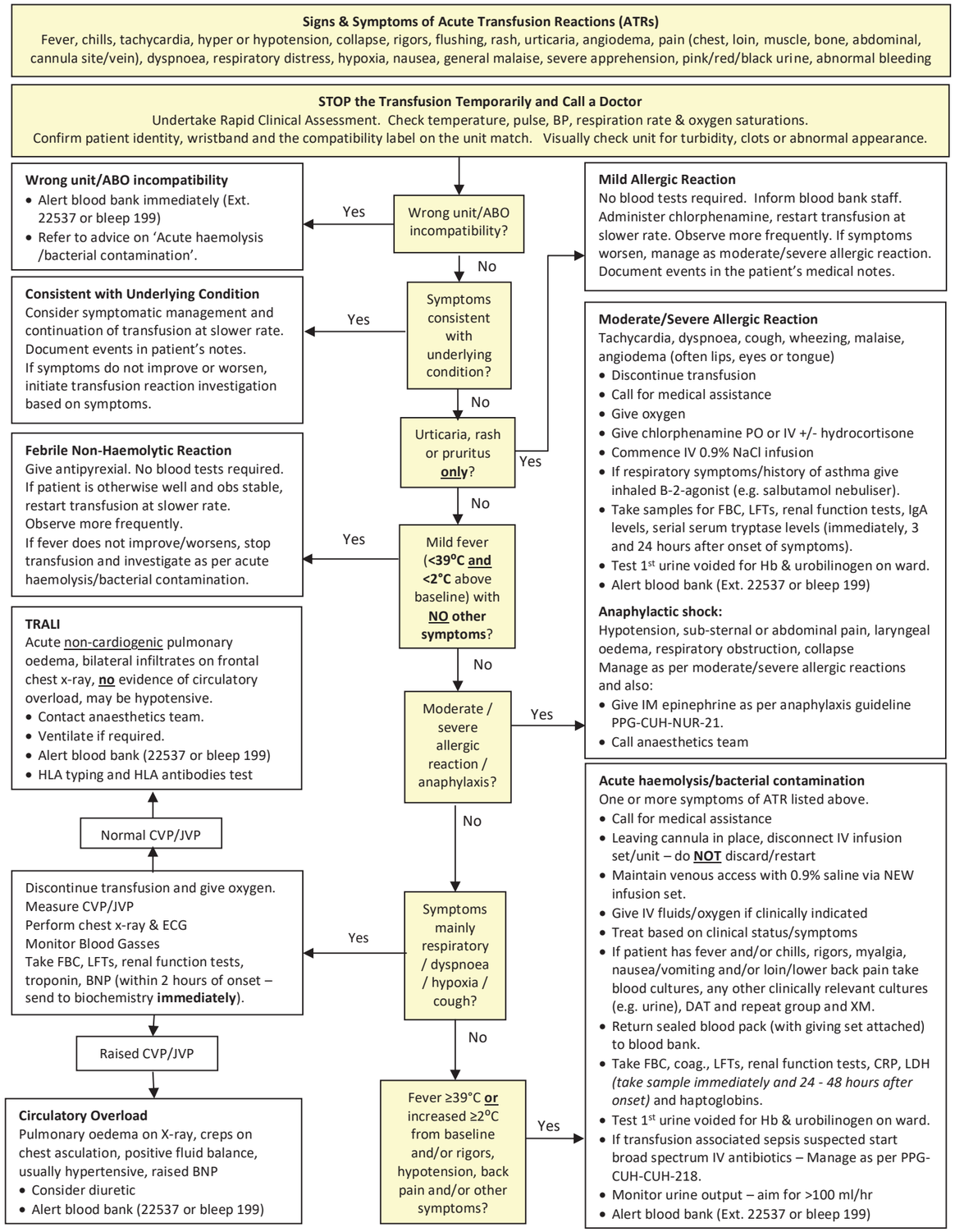
Patient's Name: _____ DOB: _____ MRN: _____

Blood Component/Product Details	Begin Tx	End Tx
7. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
8. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
9. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
10. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
11. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
12. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
13. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	

Patient's Name: _____ DOB: _____ MRN: _____

Blood Component/Product Details	Begin Tx	End Tx
14. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
15. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
16. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
17. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
18. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
19. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	
20. Unit/Batch No.: *Affix Pink Traceability Sticker*	**Signature 1:** _____ **ID Badge/IMC No.:** _____ *EBTS* **Begin Date:** _____ *'Begin'* **Begin Time:** _____ *Label*	**Signature:** _____ **ID Badge/IMC No.:** _____ *EBTS* **End Time:** _____ *'End'* **Volume Transfused:** _____ *Label* mL
	2nd Checker: *(if non-verbal patient / manual 2 person checks performed)* **Signature 2:** _____ **ID Badge/IMC No.:** _____	

Transfusion Reaction Management & Investigation Algorithm



For detailed information, refer to PPG-CUH-CUH-30 on QPULSE. Advisory services are also available from the haematology team.

Blood Component/Product Compatibility Reports

Suspected Transfusion Reaction Report

All suspected transfusion reactions, including delayed reactions, must be reported to the CUH Blood Transfusion lab.

This form must be completed by the nurse/midwife and/or doctor who observed/managed the reaction

Name: _____ Addressograph or

MRN: _____ PDA Reaction Label

Consultant: _____ Here

Ward: _____

Product/Component: _____

Unit No.(s): _____

Volume transfused: _____

Date & Time of reaction: _____

Clinical Diagnosis: _____ Reason for Transfusion: _____

Prophylactic medication administered? Yes ☐ ☐ No ☐ If yes, please specify:

_____

Previous reactions? Yes ☐ No ☐ Unknown ☐ If yes, give details: _____

_____

_____

Clinical Signs & Symptoms of a Transfusion Reaction: *(Please circle any **NEW or WORSENING** signs/symptoms)*

Pre-transfusion obs: Temp. _____ Pulse _____ BP _____ RR _____ SpO_2 _____

Reaction obs: Temp. _____ Pulse _____ BP _____ RR _____ SpO_2 _____

Pyrexia: Specify increase from baseline: _____°C Max. Temp.: _____°C

Chills / Shivers	Back pain	Collapse	Urticaria/Hives	Dyspnoea
Rigors	Loin pain	Hypotension	Rash	Orthopnoea
Facial flushing	Bone pain	Diarrhoea	Pruritus/Itch	Cyanosis
Headache	Muscle pain	Nausea/vomiting	Facial/Lip tingling	Hypertension
General malaise	Tachycardia	Anaphylaxis	Dysphonia/Hoarseness	Increased JVP
Diffuse bleeding (acute onset)	Agitation / Anxiety	Angioedema	Sub-sternal discomfort	Peripheral oedema
Haematuria/Dark urine	Falling Hb	Throat tightness	Bradycardia	Pulmonary oedema
Decreased urinary output	Jaundice	Wheezing	Tachypnoea	Positive fluid balance
Pain along infusion site	Pallor	Cough	Falling SpO_2	Creps on chest auscultation
				Lung infiltrates on chest X-ray

Other symptoms *(please specify)*: _____

Urinalysis Dipstick Results: *(To be tested on ward)*

1st urine voided after reaction: Urobilinogen: _____ Haemoglobinurea *(Free Hb)*: _____ WBCs: _____

Management of the Suspected Transfusion Reaction: *(Refer to algorithm on page 14 for guidance)*

Does the patient identity match the ID band and the laboratory compatibility tag on the unit? *	Yes ☐	No* ☐
Is the unit ABO and RhD type compatible with the patient's blood group? *	Yes ☐	No* ☐
Is the appearance of the unit normal? *(i.e. not leaking, discoloured, cloudy, clotted etc.)*	Yes ☐	No ☐
If confirmed as a possible transfusion reaction, has the blood transfusion laboratory been notified?	Yes ☐	No ☐
Required blood tests/investigations performed, as per transfusion reaction algorithm on page 14?	Yes ☐	No ☐

(If no, notify the blood transfusion laboratory **immediately**, as other patients may be at risk)*

Give a detailed description of events, including management/treatment: *(To be completed by doctor)*

_____

_____

_____

_____

_____

_____

Doctor's Signature: _____ **IMC No.:** _____ **Bleep No.:** _____

Nurse's/Midwife's Signature: _____ **ID Badge No.:** _____