North West Anglia NHS Foundation Trust

Fresh Frozen Plasma Transfusion – Guideline for Practice
Version 6

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Specialty Meeting Approval:	FISS - Pathology Specialty Meeting	**Date:**	26 November 2025
CBU Meeting Approval:	Select	**Date:**	Enter date

Additional Approval *(if required)*:				
HTC - *Tick* ☑	**D&TC** - *Tick* ☐	**TIPCC** - *Tick* ☐	**Safeguarding Committee** - *Tick* ☐	**ELD** - *Tick* ☐
26 November 2025	Enter date	Enter date	Enter date	Enter date

First-Level Approval: (Divisional Leadership Board)	FISS Divisional Leadership Board	**Date:**	14 January 2026
Second Level Approval: (*if required* – please consult sect. 6.4 of the Trust Wide Document Control Policy)	Quality Governance Oversight Committee	**Date:**	12 February 2026
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Trust Partnership Group Approval:	N/A	**Date:**	Enter date
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AUTHOR'S CHECKLIST

Document Title:	Fresh Frozen Plasma Transfusion – Guideline for Practice
Central Index Number:	C0329

Must be completed when reviewing existing published documents only

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Considerations for all documents		**Y/N**	**Action**	
			"Yes"	"No"
1.	Is the document still required?	Yes	Please see question 2.	Arrange document removal with Exec Director/Chair of DLB and forward to the relevant compliance team.
2.	Has there been any change in guidance or national policy since the previous version?	Yes	Please see question 4.	Please see question 3.
3.	**REVIEW DATE ROLL ON:** Where there has been no major[1] change to the document, can it be approved without having to go through all relevant committees (including those in chronological order)?	Select	Exec Director/Chair of the DLB to approve new review date by email*. *(see version control summary/page 3)* The following information must be sent to the relevant compliance team: 1. Evidence of review date approval (*email). Non-Clinical Compliance Team Clinical Compliance Team	Please see question 4.
4.	Can the document be approved at first-level only? (Please refer to section 6 of the Trust-wide Document Control Policy)	No	Proceed with review and **first-level only** approval processes.	Proceed with review and both first and second-level approval processes.

[1] As defined in section 7.3 of the Trust-wide Document Control Policy

VERSION CONTROL SUMMARY

Version:	Page/Section of Document:	Description of change: (List all amendments made to the document. "Review" or "Update" is not sufficient information.)	Date Exec Director/Chair of DLB approval given for change of review date only	Date approved:	Date published:
1		Original document	N/A	April 2009	May 2009
2		Re formatted into current trust procedural documents format	N/A	27/02/2013	February 2013
3		NICE guidance on indications for use incorporated Information regarding Solvent Detergent treated FFP. Change to post thaw storage time for major haemorrhage. Advice on Hepatitis E negative components included	N/A	12/07/2016	13/07/2016
4		Information on Hepatitis E Negative components removed, as all components now screened for Hepatitis E. 1:2 unit ratio of FFP: red cell transfusion in initial resuscitation in major haemorrhage, and 1:1 in trauma with or at risk of massive haemorrhage. New NHSBT factsheet included	N/A	10/10/2019	14/10/2019
5		Updated guidance on indications for use Revised NHSBT factsheet included Revised advice from SaBTO that following a review of risk reduction measures for variant Creutzfeld-Jakob disease (vCJD), individuals born on or after 1st January 1996 no longer require imported (Methylene Blue MB-pathogen inactivated) plasma.	N/A	18/1/2023	25/1/2023
6	Section 5	Updated indications in line with NBTC indication codes. Removed section on MBFFP. Removed FFP information		12/02/2026	19/02/2026

		sheet as no longer current, no replacement available.			

DOCUMENT CONTRIBUTORS

Please list the details of all who contributed to the development of this document.

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1. INTRODUCTION

1.1 Fresh frozen plasma (FFP) is given primarily for three indications: to prevent bleeding (prophylaxis), stop bleeding (therapeutic) or for plasma exchange. Prophylactic transfusions are mainly used prior to surgery or invasive procedures.

1.2 FFP is leucodepleted plasma that has been obtained from whole blood donations or by apheresis from male donors. Plasma is sourced from male donors to reduce the risk of transfusion-related acute lung injury (TRALI). The plasma has been rapidly frozen to below -25°C, to maintain the integrity of labile coagulation factors, and may be stored for up to 36 months.

1.3 Following a review of risk reduction measures for variant Creutzfeld-Jakob disease (vCJD), in September 2019 SaBTO reported that individuals born on or after 1st January 1996 **no longer require imported (Methylene Blue MB-pathogen inactivated) plasma**. NHSBT no longer import plasma, however the laboratories still stock Solvent Detergent treated FFP (Octaplas), an imported product, which is still used for some indications (see section 7).

1.4 The risks of transmitting infection are similar to those of other blood components unless specialised pathogen reduced plasma is used. Of particular concern are allergic reactions and anaphylaxis, pulmonary complications and haemolysis from transfused antibodies to blood group antigens especially A and B.

1.5 FFP is stored frozen (-30°C) and is defrosted in preparation for patient use. At least 30 minutes should be allowed from the time of request to issue to permit appropriate thawing. Please note that FFP will only be thawed for immediate use, not on ‘standby’.

2. PURPOSE

2.1 The purpose of this document is to give guidance to clinical staff who may be involved in the requesting, prescription or administration of Fresh Frozen Plasma in North West Anglia NHS Foundation Trust. The guidelines aim to standardise use of FPP across the trust in line with national guidelines.

3. SCOPE

3.1 These guidelines apply to all members of staff involved with the prescription, handling and administration of Fresh Frozen Plasma.

4. DEFINITIONS OF TERMS

4.1 **FFP** – Fresh Frozen Plasma- Plasma produced from blood donations and stored at -30°C.

4.2 **PT-** Prothrombin Time.

4.3 **APTT-** Activated Partial Thromboplastin Time.

5. INDICATIONS FOR USE

5.1 The National Blood Transfusion Committee has summarised indications for blood products considering appropriate national guidelines (NBTC 2024). FFP indications are grouped into F codes to enable monitoring of use.

F1 Major Haemorrhage

In the trauma setting transfuse empirically in a 1:1 ratio with red cells.

Other settings give FFP in at least a 1:2-unit ratio with red cells until results from coagulation monitoring are available.

Once bleeding is controlled, further FFP should be guided by abnormalities in PT and APTT (keep PT/APTT ratio of <1.5x mean normal)

The Major Haemorrhage protocol must be activated if bleeding severe.

5.2 **F2 Bleeding (excluding chronic liver disease) with PT Ratio/INR >1.5** Clinically significant bleeding without major haemorrhage. FFP required only if coagulopathy not due to chronic liver disease. Aim for a PT and APTT ratio of ≤ 1.5.

5.3 **F3 Pre-procedure (excluding chronic liver disease) with PT Ratio / INR >1.5** – Prophylactic use when coagulation results are abnormal e.g. disseminated intravascular coagulation (DIC) and invasive procedure is planned.

5.4 **F4 Historical indication; no longer recommended to transfused FFP in chronic liver disease**

5.5 **F5 Plasma exchange** – Plasma exchange for Thrombotic Thrombocytopenic Purpura (TTP) or where there is a need to replace clotting factors (in other plasmapheresis procedures, albumin would be the standard replacement fluid). Use pooled solvent-detergent treated plasma for TTP.

5.6 F6 Replacement of single coagulation factor

Where no factor concentrate is available, under direction of a Haematology consultant.

5.7 **FFP in neonates**

FFP may be of benefit in neonates with clinically significant bleeding (including massive blood loss) or prior to invasive procedures with a risk of significant bleeding, and who have an abnormal coagulation profile, defined as a PT or APTT significantly above the normal gestational and postnatal age-related reference range.

FFP is appropriate for the early management of severe hereditary protein C deficiency but should not be used in preference to protein C concentrate if this is available.

FFP should be used for the management of severe hereditary protein S deficiency.

Haemorrhagic disease of the new-born; FFP 10-20ml/kg and Intravenous Vitamin K should be given.

FFP in children

Prophylactic FFP should not be administered to non-bleeding children with minor prolongation of the PT/APTT including prior to surgery, although it may be considered for surgery to critical sites.

FFP may be beneficial in children with DIC who have a significant coagulopathy (PT/APTT >1.5 times midpoint of normal range or fibrinogen <1.0 g/l) associated with clinically significant bleeding or prior to invasive procedures.

Urgent plasma exchange with SD FFP is indicated for TTP and some forms of atypical haemolytic uraemic syndrome (HUS).

5.8 NICE recommends that fresh frozen plasma transfusion is **not** offered to correct abnormal coagulation in patients who:

- Are not bleeding (unless they are having invasive procedures or surgery with a risk of clinically significant bleeding).
- Need reversal of a vitamin K antagonist.

FFP should NEVER be used as circulating volume replacement

6. DOSE AND GROUP

6.1 FFP for adults is issued according to weight at a dose of 15ml/kg. This equates to approximately 1L (four units) of FFP for an ‘average’ 70kg patient: lighter patients may require fewer units and heavier patients more units (caution should be used in obese patients as the volume suggested may be an over estimation and may risk fluid overload).

Weight / kg	15mL/Kg	Units of FFP to be given
50	750mL	3
60	900mL	3

70	1050mL	4
80	1200mL	4
90	1350mL	5
100	1500mL	5

Children would require 15ml/kg over 30-60 minutes.

Neonates would require 15-20ml/kg with an infusion rate of 10-20ml/kg/hr, maximum of 60 minutes.

6.2 The prescription must be made on the dedicated blood product prescription chart. For adults, FFP should be prescribed as individual units NOT as a quantity in mL. For children the prescription must be in mL/kg body weight.

6.3 Reassess the patient's clinical condition and repeat the coagulation tests after fresh frozen plasma transfusion to ensure that they are getting an adequate dose, and give further doses if needed.

6.4 The Prothrombin Time (PT) and Activated Partial Thromboplastin Time (APTT) should be monitored and kept below 1.5 x normal control (refer to trust policy for major haemorrhage C0185).

6.5 In order to avoid the risk of ABO-associated haemolysis in recipients, ABO group identical FFP should be given whenever possible. If not possible, FFP of a different ABO group may be acceptable but only after discussion with the hospital transfusion laboratory staff or Consultant Haematologist. ABO compatibility for plasma components is different to that of red cells and **Group O FFP must only be given to Group O recipients.**

6.6 RhD (D) positive plasma may be given to RhD (D) negative patients of childbearing potential. Anti D prophylaxis is not required.

6.7 FFP has no cellular content and therefore, does not need to be irradiated or to be selected as Cytomegalovirus (CMV) seronegative.

7. SOLVENT DETERGENT TREATED FFP (SD FFP)

7.1 Solvent Detergent treated FFP (SD FFP) is made from a pool of several hundred donations which are leucodepleted and treated with solvent detergent to destroy viral pathogens. Octaplas® LG, is SD FFP which also includes a prion reduction. UK guidelines recommend imported SD-FFP for plasma exchange in patients with thrombotic thrombocytopenic purpura (TTP).

8. ADMINISTRATION

8.1 FFP must be administered through a 170-200µm filter (standard blood giving set). A filter is required for the giving of FFP via a syringe for neonatal transfusion.

8.2 The FFP pack should be visually inspected for pack integrity and discolouration prior to transfusion. Check that packs are not damaged and do not appear grainy or more cloudy than usual. If in doubt, DO NOT TRANSFUSE and contact the transfusion laboratory for advice.

8.3 All patients receiving FFP must wear a trust ID band. The patient's identity must be checked by 2 members of staff (either a Doctor, Registered Nurse or Midwife or ODP) prior to commencement of the transfusion. The details on the tag attached to the FFP pack must be checked against the details on the patients ID band. In addition, the patient should be asked to confirm their name and date of birth, if they are able to do so. Ensure you follow the full process in the Trust Blood Transfusion Policy C0160.

8.4 FFP takes approximately 20- 30 minutes to thaw, and for maximum efficacy should be administered as soon as possible after thawing.

8.5 Start the transfusion as soon as the pack is received. Return unused packs to the transfusion laboratory for safe storage if transfusion is not started within 30 minutes of removal from the blood fridge. Pre-thawed FFP that is out of a controlled temperature environment (+4 ± 2°C), can be accepted back into temperature-controlled storage if this occurs on one occasion only of less than 30 min.

8.6 Transfusion of FFP should be completed within 4 hours of removal from the blood fridge.

8.7 FFP packs are stored at 4ºC once thawed and **must be used within 24 hours of thawing.** JPAC (the Joint United Kingdom (UK) Blood Transfusion and Tissue Transplantation Services Professional Advisory Committee) have approved an extension of the post-thaw expiry of FFP in accordance with clinical guidelines from 24 hours to 120 hours (5 days) when stored between 2-6°C for use in a major haemorrhage. For indications other than unexpected major haemorrhage, the component must be used within 24 hours of thawing. This change only relates to UK-sourced adult plasma and does not extend to imported MBFFP, the post-thaw expiry of which remains unchanged at 24 hours.

8.8 The NICE Guideline for Blood Transfusion (2015) states that patients who may have or who have had a transfusion, and their family members or carers (as appropriate), should be provided with verbal and written information explaining:

- The reason for the transfusion.
- The risks and benefits.
- The transfusion process
- Any transfusion needs specific to them.
- Any alternatives that are available
- That they are no longer eligible to donate blood.

The National Blood Service has produced a patient information leaflet – 'Will I need a Blood Transfusion', which covers much of this information, and so this should be offered to the patient as appropriate.

In 2025 undated guidelines on patient consent for transfusion have been published emphasising the need for informed and valid consent for all transfusions (Expert advisory committee on the Safety of Blood, Tissues and Organs, SaBTO). See the main Blood Transfusion Policy for further information on consent.

8.9 Inform the patient of possible complications of transfusion, and the importance of reporting any adverse effects. A number of reactions may follow FFP transfusions. They are the same as those which can occur after the transfusion of red cell concentrates including:

- Acute transfusion reactions (allergic, hypotensive or severe febrile)
- Pulmonary complications. Because of the high volumes required to produce a haemostatic benefit, patients receiving FFP must have careful risk assessment and haemodynamic monitoring to prevent Transfusion Associated Circulatory Overload (TACO).
- Infection.

8.10 Follow the same baseline, 15 minute and post transfusion observation checks as for red cell transfusions. If a reaction is suspected, STOP THE TRANSFUSION, and inform medical staff and the transfusion laboratory immediately. An adverse event (DATIX) and transfusion reaction form must be completed.

REFERENCES

Green et al,, (2018) British Society of Haematology Guidelines on the spectrum of fresh frozen plasma and cryoprecipitate products: their handling and use in various patient groups in the absence of major bleeding *British Journal of Haematology* Vol 181 No 1 Available from: British Society of Haematology Guidelines on the spectrum of fresh frozen plasma and cryoprecipitate products: their handling and use in various patient groups in the absence of major bleeding [Accessed 11/09/25]

Murphy, M. F. et al., (2025) Guidelines from the expert advisory committee on the Safety of Blood, Tissues and Organs (SaBTO) on patient consent and shared decision-making for blood transfusion British Journal of Haematology Available from: British Journal of Haematology | Wiley Online Library [Accessed 10/10/25]

National Blood Transfusion Committee (2024) Indication codes for transfusion in adults – a summary of published recommendations 2024 Update. Version 3. Available from: Microsoft Word - NBTC indication codes V3 2024.docx [Accessed 11/09/25]

National Institute for Health and Care Excellence (2015) NG24 Blood transfusion: NICE guideline. Available from: Overview | Blood transfusion | Guidance | NICE [Accessed 11/09/25]

New et al. (2016) British Society of Haematology: Guidelines on transfusion for fetuses, neonates and older children *British Journal of Haematology* Vol 175 No 5 Available from: British Journal of Haematology | Wiley Online Library [Accessed 11/09/25]

Robinson et al., (2017) The administration of blood components: a British Society for Haematology Guideline *British Journal of Haematology* Vol 28 No 1 Available from: The administration of blood components: a British Society for Haematology Guideline [Accessed 11/09/25]

APPENDIX A: PHARMACY QUALITY ASSURANCE CHECKLIST

Pharmacy Quality Assurance Checklist for all Medicine-Related Clinical Policies, Procedures and Guidelines

This form must be completed by the appropriate designated pharmacist for all policies, procedures and guidelines relating to medicines prior to being submitted to the Drugs and Therapeutics Committee.

Title of Document:			**Central Index Number:**
1.	**Document particulars:**	**Yes / No / N/A**	**Comments (as necessary)**
	Is the document written in clear, unambiguous language?		
	Does the document also apply for Hinchingbrooke Hospital/ Peterborough City Hospital/ Stamford Hospital?		
	If the answer to the above question is YES, has the relevant pharmacist at the cross site location been contacted for their input? **(Please indicate name of person contacted in comments)**		
2.	**Evidence Based**		
	Are the product(s) on the Formulary? If non-formulary then please submit Formulary request/Business case.		
	Have indications been clearly reviewed?		
	Are the medicines, hospital supply only?		
	Have doses of medication been clearly reviewed?		
	Are definitions in the document clearly explained?		
	Are roles and responsibilities in the document clearly explained?		
	Are the products listed in the document licensed, unlicensed or off license? If unlicensed then please complete unlicensed form.		
	Are there any Patient Safety Alerts/MHRA Alerts/NICE guidance associated with the document?		
	Is there any specific ordering or storage requirements with the product(s) in the document?		
	Are there any cost implications with the product(s) in the document?		
	Is there any supporting evidence to support the document? **(References should be checked and updated)**		
	Are there measurable standards to support the monitoring of compliance? **(Audit table applicable to policies only)**		
3.	**Pharmacist Compliance Approval:**		
	Name:		
	Signature:		
	Role:		
	Date:		

Please return completed form to the Pharmacy Medicines Governance Team.

Pharmacy Medicines Governance – updated December 2022

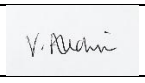
APPENDIX B: QUALITY ASSURANCE CHECKLIST

CORPORATE GOVERNANCE COMPLIANCE OFFICER'S USE ONLY

		Y/N/ n/a	COMMENTS (to author for amendments)
1	**Title of document**		
	Is the title clear and unambiguous	Y	
2	**Type of document (e.g. procedure, guidance)**		
	Is it clear whether the document is a procedure, guideline, SOP?	Y	
3	**Introduction**		
	Are reasons for the development of the document clearly stated?	Y	
4	**Content**		
	Are all sections of the front cover completed correctly?	Y	
	Is the document in the correct Trust approved format?	Y	
	• Paragraphs numbered consecutively	Y	
	• Headers: only on front page to contain logo	Y	
	• Footers: on every page except front page	Y	
	Has the Author's Checklist been fully updated?	Y	
	Are the Version numbers correct in the title, summary and the footers?	Y	
	Has the Version Control Summary been fully updated with changes?	Y	
	Has the Document Contributors section been completed?	Y	
	Are the objectives/aims clearly stated?	Y	
	Does this document concern the handling, moving or storage of personal identifiable or commercially sensitive information? If yes, has a Summary Privacy Impact Assessment been completed?	N/A	
5	**Evidence Base**		
	Is the type of evidence to support the document explicitly identified?	Y	
	Are associated documents referenced?	Y	
6	**Approval Route**		
	Has email approval been received for change of review date only?	N/A	
	Does the document identify which committee/group will approve it?	Y	
	Does the document meet the criteria for Second Level approval or Information Only?	Y	

If answers to any of the above questions is 'no', then this document is not ready for approval, it needs further review.

It is vitally important that documents are forwarded to the Corporate Governance Compliance Team after every amendment and approval meeting to ensure the most up-to-date version is held by the team at all times.

CORPORATE GOVERNANCE COMPLIANCE TEAM:		
1.	Date comments returned to author by Compliance Lead:	
2.	Date of Corporate Governance Compliance Team approval:	13.10.2025
3.	Name of Compliance Lead:	Viv Allchin 

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If certain sections are not applicable to the document's journey, please enter 'N/A'

SPECIALTY APPROVAL MEETING: Pathology Specialty Meeting			
On approval, Chair to sign below and send the document and the minutes from the approval committee to the Corporate Governance Team. **To aid distribution all documentation should use electronic signatures and be sent electronically wherever possible.**			
Chair's Name	**Dr Lynda Menadue**	**Date**	26/11/2025
Signature			

CBU APPROVAL MEETING: Enter name of **CBU** meeting			
On approval, Chair to sign below and send the document and the minutes from the approval committee to the Corporate Governance Team. **To aid distribution all documentation should use electronic signatures and be sent electronically wherever possible.**			
Chair's Name	**Not Applicable**	**Date**	Enter date
Signature			

ADDITIONAL APPROVAL MEETINGS: Complete all that apply

On approval, Chair to sign below and send the document and the minutes from the approval committee to the Corporate Governance Team. **To aid distribution all documentation should use electronic signatures and be sent electronically wherever possible.**

Hospital Transfusion Committee		Select Meeting.	
Chair's Name	Dr Lynda Menadue	**Chair's Name**	
Date	26/11/2025	**Date**	Enter date
Signature		**Signature**	
Select Meeting.		**Select Meeting.**	
Chair's Name		**Chair's Name**	
Date	Enter date	**Date**	Enter date
Signature		**Signature**	

FIRST-LEVEL APPROVAL: FISS Divisional Leadership Board			
On approval, Chair to sign below and send the document and the minutes from the approval committee to the Corporate Governance Team. **To aid distribution all documentation should use electronic signatures and be sent electronically wherever possible.**			
Chair's Name	Dr. Tim Jones	**Date**	14/01/2026
Signature			

Please confirm if document requires Second-Level **approval** or it is to be submitted for **information only**. Please see section 6.4 of the Trust's Document Control Policy.	✓ **APPROVAL**
	☐ **INFORMATION ONLY**

SECOND-LEVEL APPROVAL: Quality Governance Oversight Committee			
On approval, Chair to sign below and send the document and the minutes from the approval committee to the Corporate Governance Team. **To aid distribution all documentation should use electronic signatures and be sent electronically wherever possible.**			
Chair's Name	Dr Aber Eaub	**Date**	19/02/2026
Signature