CLINICAL PRACTICE GUIDELINES

Appropriate Use of Fresh Frozen Plasma and Cryoprecipitate

Summary of NHMRC/ASBT guidelines

This summary is derived from the National Health and Medical Research Council (NHMRC)/Australasian Society of Blood Transfusion (ASBT) *Clinical Practice Guidelines on the Use of Blood Components* (red blood cells, platelets, fresh frozen plasma and cryoprecipitate). The guidelines were produced in cooperation with the Commonwealth Department of Health and Aged Care, the Royal Australasian College of Surgeons, the Australian and New Zealand College of Anaesthetists, and other relevant groups. The coalition of organisations involved in developing the guidelines demonstrates the degree of interest across the specialties in promoting the appropriate use of blood components.

The recommendations included in this summary have been endorsed by the NHMRC and the ASBT. The recommendations aim to support:

- clinical decisions about the use of fresh frozen plasma and cryoprecipitate; and
- quality processes to promote appropriate use of blood components and optimise patient outcomes.

The clinical recommendations are summarised overleaf. For further details, consult the NHMRC/ASBT guidelines.

Organisational practice

Changing organisational practice through quality improvement is as important as changing clinical practice. A quality management system that includes monitoring, assessment, action and evaluation will allow audit of usage at the local level and eventual evaluation of changes in practice and effect on health outcomes.

Documentation used in ordering or administering blood components (eg request forms or blood administration forms) should summarise the clinical recommendation of these guidelines and collect standardised data items. Clinical and laboratory indications for blood components should be accurately recorded in that documentation and in the patient's medical record.

As well as a record of the clinical or laboratory indications for the use of blood components, other relevant data could include: reasons for giving blood components if not in accordance with the guidelines (eg if fresh frozen plasma is given when there is no evidence of bleeding or abnormal coagulation); and other relevant medical history of the patient's condition.

In all situations where blood component therapy is given, a process for clinical review should be in place to monitor the appropriateness and safety of its use and to develop systems for the implementation of these guidelines.

Clinical review groups or 'transfusion committees' should include senior representatives of relevant clinical specialties and administration, nurses, blood bank and staff involved in quality improvement. In larger hospitals this is likely to be a separate committee. However, this is not necessary and in smaller hospitals, the role could be undertaken by the medical advisory committee or through a local geographic or organisational network.

As part of the informed consent process, a patient should be given clear explanation of the potential risks and benefits of blood component therapy in his or her situation.

Community concern about blood issues and the safety of blood component therapy makes the consideration of consumer issues and processes for informed consent particularly important. Change at clinical and organisational levels within hospitals will help to standardise the use of blood components. Consumers can also be important drivers of change to practice, if they are aware of the issues surrounding use of blood components and know about the risks and benefits in their own situation.

Contact Details

This document is one in a series of documents developed by the NHMRC/ASBT about the use of blood components. These documents are available from:

- NHMRC Website at: http: //www.nhmrc.gov.au, or
- ASBT Website at: http://www.asbt.org.au

Print copies of all documents can be obtained by emailing:

- *HEALTH ADVISORY CTTEE NHMRC@nhmrc.gov.au* or by telephoning (02) 6289 9520 (24hr answering machine) or 1800 020 103. Alternatively you can contact the ASBT by telephoning (02) 9256 5456 or emailing to the secretariat@asbt.org.au.

NHMRC
National Health & Medical Research Council

AUSTRALASIAN SOCIETY OF BLOOD TRANSFUSION INC

Appropriate Use of Fresh Frozen Plasma and Cryoprecipitate

Fresh frozen plasma is frequently used inappropriately, either in respect of the particular indication or in excessive quantity for a given indication. There are also a number of clinical situations in which the use of fresh frozen plasma has been advocated but has not been shown to be of benefit or alternative therapies are equally satisfactory or safer.

As there is little scientific evidence regarding the effectiveness of cryoprecipitate in improving clinical outcomes, and specific factor concentrates are now widely available, its use should be limited to selected indications.

Use of **FFP** is likely to be appropriate for:

Indication*	Considerations
Single factor deficiencies	Use specific factors if available.
Warfarin effect	In the presence of life-threatening bleeding. Use in addition to vitamin-K-dependent concentrates.
Acute DIC	Indicated where there is bleeding and abnormal coagulation. Not indicated for chronic DIC.
TTP	Accepted treatment.
Coagulation inhibitor deficiencies	May be appropriate in patients undergoing high-risk procedures. Use specific factors if available.
Following massive transfusion or cardiac bypass	May be appropriate in the presence of bleeding and abnormal coagulation.
Liver disease	May be appropriate in the presence of bleeding and abnormal coagulation.

* The use of fresh frozen plasma or cryoprecipitate for indications not listed in these tables is unlikely to be considered appropriate. Consult the NHMRC/ASBT guidelines for further details. Clinical and laboratory indications should be documented.

Note: Abnormal coagulation is defined here as greater than 1–1.5 times normal range.

Use of **cryoprecipitate** is likely to be appropriate for:

Indication*	Considerations
Fibrinogen deficiency	May be appropriate where there is clinical bleeding, an invasive procedure, trauma or DIC.
DIC	Fibrinogen deficiency is commonly encountered in DIC. At fibrinogen levels lower than 1.0g/L and where there is clinical bleeding, use of cryoprecipitate to keep fibrinogen levels above 1.0g/L may be indicated.

Contraindications

The use of **fresh frozen plasma** is generally not considered appropriate in cases of

- hypovolaemia,
- plasma exchange procedures or
- treatment of immunodeficiency states.

Unless alternative therapies are unavailable, the use of **cryoprecipitate** is not generally considered appropriate in the treatment of:

- haemophilia
- von Willebrand's disease, or
- deficiencies of factor XIII or fibronectin.

Prescribing blood components: checklist for clinicians

Decisions should be based on the NHMRC/ASBT *Clinical Practice Guidelines for the Use of Blood Components*, taking individual patient needs into account. Before prescribing fresh frozen plasma or cryoprecipitate, ask yourself the following questions.

1. What improvement in the patient's condition am I aiming to achieve?
2. Can I minimise blood loss to reduce the patient's need for transfusion?
3. Are there any other treatments (such as specific or combined factor concentrates) that would be more appropriate and safer?
4. What are the specific clinical or laboratory indications for fresh frozen plasma or cryoprecipitate for this patient?
5. What are the risks of transmitting infectious agents through the available blood products?*
6. Do the benefits of transfusion outweigh the risks for this particular patient?
7. What other options are there if no fresh frozen plasma or cryoprecipitate is available in time?
8. Will a trained person monitor this patient and respond immediately if any acute transfusion reactions occur?
9. Have I recorded my decision to transfuse and reasons for transfusion on the patient's chart and any documentation used in the ordering or administering of blood components?
10. Has the patient been given a clear explanation of the potential risks and benefits of blood component therapy in his or her particular case?

* Note that the rates of non-infective complications are probably higher than those of infective complications.

Adapted from WHO (1998) *Transfusion Today* 38: 3–6.

Abbreviations: DIC = disseminated intravascular coagulation; TTP = thrombotic thrombocytopenic purpura

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