

# This guidance is based on the National Blood Transfusion Committee (NBTC) Indication Codes for Transfusion (June 2016)

National Blood Transfusion Committee

The indications for transfusion provided below are taken from national guidelines for the use of blood components in adults (see references). Amalgamation into this summary document aims to act as a prompt for clinicians to facilitate appropriate use and to enable robust documentation of indications. Each indication has been assigned a number, to permit reproducible coding, when requesting blood or for documentation purposes. Specific details regarding the patient's diagnosis and any relevant procedures to be undertaken should also be provided at request either on a written request form, electronic blood order or by telephone when the request is urgent. These are current guidelines and may change depending on new evidence.

## Red cell concentrates

*Dose – in the absence of active bleeding, use the minimum number of units required to achieve a target Hb. Consider the size of the patient; assume an increment of 10g/L per unit for an average 70kg adult.*

### R1. Acute bleeding

Acute blood loss with haemodynamic instability.

After normovolaemia has been achieved/maintained, frequent measurement of Hb (including by near patient testing) should be used to guide the use of red cell transfusion – see suggested thresholds below.

### R2. Hb ≤ 70g/L stable patient

Acute anaemia. Use an Hb threshold of 70g/L and a target Hb of 70-90g/L to guide red cell transfusion. Follow local/specific protocols for indications such as post cardiac surgery, traumatic brain injury, acute cerebral ischaemia.

### R3. Hb ≤ 80g/L if cardiovascular disease

Use an Hb threshold of 80g/L and a target Hb of 80-100g/L.

### R4. Chronic transfusion dependent anaemia

Transfuse to maintain an Hb which prevents symptoms. Suggest an Hb threshold of 80g/L initially and adjust as required. Haemoglobinopathy patients require individualised Hb thresholds depending on age and diagnosis.

### R5. Radiotherapy maintain Hb ≥ 110g/L

There is limited evidence for maintaining an Hb of 110g/L in patients receiving radiotherapy for cervical and possibly other tumours.

### R6. Exchange transfusion

## Fresh frozen plasma (FFP)

*Dose – 15ml/kg body weight, often equivalent to 4 units in adults.*

### F1. Major haemorrhage

Early infusion of FFP is recommended in a ratio of 1 unit FFP:1 unit red cells for trauma and at least 1 unit FFP:2 units red cells in other major haemorrhage settings. Once bleeding is under control, FFP use should be guided by timely tests for coagulation as indicated below.

### F2. PT Ratio/INR >1.5 with bleeding

Clinically significant bleeding without major haemorrhage. FFP required if coagulopathy. Aim for a PT and APTT ratio of ≤1.5.

### F3. PT Ratio/INR >1.5 and pre-procedure

Prophylactic use when coagulation results are abnormal e.g. disseminated intravascular coagulation and invasive procedure is planned with risk of clinically significant bleeding.

### F4. Liver disease with PT Ratio/INR >2 and pre-procedure

FFP should not be routinely administered to non-bleeding patients or before invasive procedures when the PT ratio/INR is ≤2.

### F5. TTP/plasma exchange

### F6. Replacement of single coagulation factor



## Prothrombin complex concentrate

*Dose should be determined by the situation and INR. Local guidelines should be followed.*

**PCC1. Emergency reversal of VKA for severe bleeding** or head injury with suspected intracerebral haemorrhage.

**PCC2. Emergency reversal of VKA pre emergency surgery**

## Cryoprecipitate

*Dose – 2 pooled units, equivalent to 10 individual units, will increase fibrinogen by approximately 1g/L. Cryoprecipitate is usually used with FFP unless there is an isolated deficiency of fibrinogen.*

**C1. Clinically significant bleeding and fibrinogen <1.5g/L (<2g/L in obstetric bleeding)**

**C2. Fibrinogen <1g/L and pre procedure**

**C3. Bleeding associated with thrombolytic therapy**

**C4. Inherited hypofibrinogenaemia, fibrinogen concentrate not available**



## Platelet concentrates

*Dose – for prophylaxis, do not routinely transfuse more than 1 adult therapeutic dose. Prior to invasive procedure or to treat bleeding, consider the size of the patient, previous increments and the target count.*

### Prophylactic platelet transfusion

**P1. Plt <10 x 10<sup>9</sup>/L reversible bone marrow failure**  
Not indicated in chronic bone marrow failure

**P2. Plt 10 – 20 x 10<sup>9</sup>/L sepsis/haemostatic abnormality**

### Prior to invasive procedure or surgery

**P3. To prevent bleeding associated with invasive procedures.**  
Platelets should be transfused if:

- **P3a Plt <20 x 10<sup>9</sup>/L central venous line**
- **P3b Plt <40 x 10<sup>9</sup>/L pre lumbar puncture/spinal anaesthesia**
- **P3c Plt <50 x 10<sup>9</sup>/L pre liver biopsy/major surgery**
- **P3d Plt <80 x 10<sup>9</sup>/L epidural anaesthesia**
- **P3e Plt <100 x 10<sup>9</sup>/L pre critical site surgery e.g. CNS.**
- **Transfusion prior to bone marrow biopsy is not required.**

### Therapeutic use to treat bleeding (WHO bleeding grade 2 or above)

**P4a Major haemorrhage Plt <50 x 10<sup>9</sup>/L**

**P4b Critical site bleeding e.g. CNS/traumatic brain injury Plt <100 x 10<sup>9</sup>/L**

**P4c Clinically significant bleeding Plt <30 x 10<sup>9</sup>/L.**

### Specific clinical conditions

**P5a DIC pre procedure or if bleeding.**

**P5b Primary immune thrombocytopenia (emergency treatment pre-procedure/severe bleeding).**

### Platelet dysfunction

**P6a Consider if critical bleeding on anti-platelet medication.**

**P6b Inherited platelet disorders directed by specialist in haemostasis.**



## References

British Committee for Standards in Haematology (2012). Guidelines on the management of anaemia and red cell transfusion in adult critically ill patients. *British Journal of Haematology*, **160**, 445-46.  
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British Society of Gastroenterology (2015). UK guidelines on the management of variceal haemorrhage in cirrhotic patients. *GUT*, **0**, 1-25.

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Further information on blood transfusion will be available on hospital intranet sites or from the blood transfusion laboratory.