Consent for Blood Transfusion
Guidance for Healthcare Practitioners in the UK

Informed consent discussion

This is a generic list covering the SaBTO guidance recommendations – discussions should cover what is important to individual patients.

☐ BENEFITS

Red cells: Relieve symptoms of anaemia;
Prevent complications of anaemia (tissue ischaemia, organ damage);
Earlier mobilisation/ quicker recovery after illness or surgery

Platelets/plasma: Stop or prevent bleeding

☐ RISKS and actual or potential consequences

See reverse for explanation of these risks

- Wrong blood/wrong patient
- Febrile non-haemolytic reaction
- Allergic reaction
- Pulmonary complications:
  - Transfusion-Associated Circulatory Overload (TACO)
  - Transfusion-Related Acute Lung Injury (TRALI)
- Haemolytic Transfusion Reaction - acute or delayed
- Transfusion Transmitted Infection - bacterial, viral, other
- Antibody formation
- Iron overload
- Other complications
- The patient can no longer donate blood

☐ ALTERNATIVES as relevant/appropriate to the clinical situation

Red cells: IV/Oral iron; Other haematinic replacement (B_{12}, folate); Erythropoietin; Cell salvage (surgery)

Plasma: Factor concentrates if applicable

Platelets: Tranexamic acid

☐ INFORMED PATIENT

Provide patient information sheets, allow time to read and an opportunity to ask questions. There may be particular considerations to take into account for specific patient groups, such as paediatrics, multi-transfused, etc.

☐ CONSENT (or REFUSAL)

Document your discussion and outcome in the patient's care records. If the patient refuses the proposed treatment (transfusion), try to explore why; contact a transfusion expert if required. Ensure the patient understands the possible consequences of declining the transfusion; ensure any Advanced Directive is applicable and valid.

Developed on behalf of the United Kingdom and Ireland Blood Transfusion Network (UK&IBTN); Version 1, October 2022

Wrong blood/wrong patient – where a patient is transfused with a blood component of an incorrect blood group, or which was intended for another patient. This could potentially lead to an ABO incompatible transfusion, which could be fatal.
Frequency: Very Rare (< 1/10,000) thanks to safety checks at all stages in the transfusion process.
Reducing the risk: All staff involved in transfusion should be appropriately trained; they will only be involved in one transfusion at a time; they will undertake essential patient identification checks at each stage of the transfusion process (includes taking a blood sample, authorisation and administration). The patient should expect to be asked their full name and date of birth at the least, and has a right to ask if this does not happen. Safety checks built into laboratory IT systems ensure the patient's current sample is consistent with their previous blood group results and help prevent an incorrect unit being issued.

Febrile non-haemolytic reaction is characterised by a rise in temperature and/or other inflammatory symptoms such as rigors, myalgia or nausea. In some cases they may require medical intervention. The cause is not fully understood, but may be due to residual white cells in the unit or cytokines built up during storage. Usually a reaction to a specific unit of blood component, it is difficult to mitigate against and often unpredictable.
Frequency: *Mild:* Common (≥1/100 to <1/10), *Moderate & Severe:* Rare (≥1/10,000 to <1/1,000).
Reducing the risk: Since the introduction of leucodepleted blood components febrile reactions have become less common. Transfusing over a longer period or temporarily stopping the transfusion and/or giving paracetamol may help. Only a small proportion of patients will experience recurrent febrile reactions. In such cases, giving prophylactic paracetamol may reduce the incidence.

Allergic reaction to plasma proteins in the donor unit (often against a specific donor); difficult to avoid and usually unpredictable. Range from mild to severe (including anaphylaxis), with symptoms including flushing, urticaria or rash, wheeze, bronchospasm, stridor, angiodema and circulatory problems (not typically associated with fever type symptoms).
Frequency: *Mild:* Common (≥1/100 to <1/10), *Moderate & Severe:* Rare (≥1/10,000 to <1/1,000).
Reducing the risk: A small number of people may have recurrent allergic reaction to transfusion. Measures to mitigate this include use of platelets in additive solution, prophylactic antihistamine, 'washed' red cells, solvent-detergent treated plasma. Treatment as per local protocol (using antihistamine, adrenaline or steroids as indicated).

Transfusion-Associated Circulatory Overload (TACO) – pulmonary oedema/ respiratory compromise due to volume overload - develops within 12 hours of transfusion. Can occur after transfusion of relatively small volumes if there are patient risk factors.
Frequency: Rare (≥1/10,000 to <1/1,000), however it is thought to be under-reported. Leading cause of morbidity & mortality related to transfusion.
Reducing the risk: Ideally all patients (particularly those >50 years) should have a TACO risk assessment before transfusion. Mitigating measures include prescribing by volume (mL) rather than in units [**essential in neonatal/paediatric patients**], use of diuretics, transfusing slowly with closer monitoring.

Transfusion-Related Acute Lung Injury (TRALI) – acute dyspnoea and pulmonary infiltrates developing within 6 hours of transfusion, in the absence of circulatory overload or other causes. May be due to antibodies in the donor which react against recipient white blood cells.
Frequency: Very Rare (<1/10,000). Most cases reported are in patients already unwell with a pre-existing inflammatory insult (e.g. sepsis, trauma).
Reducing the risk: As anti-leucocyte antibodies are most likely to form following pregnancy, plasma components (FFP, cryoprecipitate) in the UK are only sourced from male donors. Female platelet donors are screened for these antibodies.

Haemolytic Transfusion Reaction (HTR) occurs when antibodies in the patient's plasma react with antigens on transfused allogeneic red blood cells, causing haemolysis. HTR occurring during, or within 24 hours of, transfusion is classed as *acute*; a *delayed* HTR can occur days to weeks after the transfusion. Symptoms include fever, rigors, chills, hypotension, pain, dyspnoea, tachycardia, nausea, or restlessness; acute HTR can be life-threatening.
Frequency: Rare (≥1/10,000 to < 1/1,000). Patients with haemoglobinopathies are at a higher risk of HTR.
Reducing the risk: Patients are encouraged to report any unusual sensation experienced during or after their transfusion; they should also be discharged with information about signs/symptoms to look out for and who to contact. Historical antibodies should be clearly documented in clinical notes and transfusion records including the transfusion laboratory information system, and compatible blood should issued.

Transfusion Transmitted Infection – an infection following a transfusion, where there was none before and no alternative source of infection, and at least one component transfused came from a donor with the same transmissible infection, or was shown to contain the agent of infection. Transfusion-Transmitted Infection (TTI) may be bacterial, viral, or other such as prions, protozoa and filaria.
Frequency: Variable depending on type of infection but most are Extremely Rare (<1/1,000,000). In the last 10 years, between 0-5 TTIs have been confirmed each year, in the context of over 2 million units of blood components issued per year from the UK blood services to hospitals.
Reducing the risk: *Bacterial:* visual inspection of component for contamination at issue and at administration, administration using aseptic non-touch technique, temperature-controlled storage, adherence to expiry date and time, bacterial monitoring (for platelets). *Viral:* donor health check, screening of donations: HIV, HBV, HCV, Syphilis, HTLV, HEV; not all blood components have been screened for cytomegalovirus (CMV): if your patient requires CMV negative components, make sure this is identified on the blood request, transfusion instruction, and patient's records.

Antibody formation – atypical antibodies can form when the patient's immune system has been exposed to blood group antigens that they do not have themselves. This can happen following a blood transfusion or a pregnancy. Consequences: clinical significance varies from insignificant to harmful if a patient is subsequently transfused with red cells (or platelets) that have the corresponding antigen; can lead to delays in providing suitable blood components; in people of childbearing potential, can cause complications with future pregnancies (potentially causing HDFN).
Frequency: Common (≥1/100 to <1/10). [HDFN - haemolytic disease of the fetus and newborn]
Reducing the risk: People of childbearing potential are routinely transfused D-negative and K-negative red cells if they lack these antigens (as anti-D and anti-K antibodies are most likely to cause HDFN). Additional testing is done on patients who need to go on to long term transfusion programmes.
Avoiding unnecessary transfusion is the best way to reduce chances of antibody formation.

Iron overload – non-bleeding patients who receive multiple units of red cells (>10) are at risk of having excess iron stored in their body tissues leading to iron toxicity. This can damage organs such as the heart and liver. Each unit of red cells contains about 200-250 mg of iron.
Frequency: Very Common if repeatedly transfused (≥1/10).
Reducing the risk: Patients on long term red cell transfusion plans should be considered for iron chelation therapy, plus regular iron studies performed.

Other complications

Transfusion-Associated Necrotising Enterocolitis (TANEC) – necrotising enterocolitis (a serious neonatal gastrointestinal condition associated with significant morbidity and mortality) occurring within 48 hours of a blood transfusion.
Frequency: Not known; some clinicians do not believe the cause of the NEC is transfusion, but instead that it is related to the hypoxia of tissues in the gut due to anaemia; however SHOT state that it appears to be under-reported.
Reducing the risk: Some clinicians advocate withholding enteral feeds to neonates for a period of time prior to, during & after transfusion.
Transfusion-Associated Graft versus Host Disease (TA-GvHD) – engraftment and clonal expansion of viable donor lymphocytes in a susceptible host, characterised by fever, rash, liver dysfunction, diarrhoea, pancytopenia and bone marrow hypoplasia occurring less than 30 days after transfusion.
Frequency: Very Rare (<1/10,000).
Reducing the risk: In most cases TA-GvHD is fatal. Irradiation of cellular blood components (red cells, platelets, granulocytes) greatly reduces occurrence - if your patient might be at risk of TA-GvHD you must ensure the need for irradiated blood components is clearly communicated. Since 1999 all allogeneic blood components produced in the UK have been leucodepleted, with very few stated exceptions (e.g. granulocytes). No cases of TA-GvHD have been reported in patients receiving leucodepleted components. However, as it cannot be assured that leucodepletion is fully protective, irradiation is still required.
Unknown risks – there is an established network in the UK which continually collates and analyses reports of adverse reactions and events related to transfusion (the SHOT haemovigilance system). This enables any new emerging safety concerns or trends to be identified and addressed promptly.