



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

INDEX

Administration:

Should you flush an IV line between/after a blood transfusion?.....	A1
Can I use a pump for ALL blood components?.....	A2
What type of filter do I need?.....	A3
What are the recommended blood obs?.....	A4
How long should a blood transfusion run for?	A5
What IV fluids can I run concurrently with blood?.....	A6
What type of IV lines can I use for a transfusion?.....	A7
What medications can I run concurrently with blood?.....	A8
When should you use a blood warmer?.....	A9
What type of IV access is acceptable for a blood transfusion?.....	A10
Can I store blood in a ward fridge?.....	A11
Why do we need to be so pedantic in the pre-transfusion checking procedure?.....	A12
What should I look for when visually checking the unit of blood prior to transfusion?.....	A13
How often do I need to change the IV giving set when transfusing blood?.....	A14
Why should you avoid giving transfusions overnight?.....	A15
Why should we start a transfusion within 30mins of release from Blood Bank?.....	A16
Why is only 1 unit of blood released for use at a time? Why can't I collect multiple units at once?.....	A17

Specimens:

How long after a blood transfusion should a check Haemoglobin (Hb) be performed?.....	S1
Why do we have Zero Tolerance?.....	S2
How soon after giving FFP should an INR be performed?.....	S3
Why is there a 72 hour limit on crossmatch?.....	S4
Why are patient labels acceptable on a G+H or crossmatch specimen? Why don't we have to handwrite the details?	S5
Why can't I pre-label blood specimen tubes?.....	S6

Products:

What is the difference between pooled and apheresis platelets?.....	P1
What does Buffy Coat Poor mean?.....	P2
What does leucocyte depleted mean?.....	P3
Why and when would I give irradiated blood?.....	P4
What is the significance of CMV negative blood?.....	P5
How are all the different blood components stored? For how long?.....	P6
What do I need to know about Albumin?.....	P7
What do I need to know about Intragam P?	P8



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

What do I need to know about Sandoglobulin?.....	P9
What do I need to know about Anti-D?.....	P10
What do I need to know about Prothrombinex (PTX)?.....	P11
What do I need to know about Biostate?.....	P12
Why is autologous blood not encouraged?.....	P13
What does HLA matched mean?.....	P14
What does Novoseven do?.....	P15
What is each unit of blood in Australia tested for?.....	P16
What is a directed donation?.....	P17
Why don't we keep thawed FFP ready for use in EH?.....	P18
What blood groups are compatible?.....	P19

Risks/Adverse events:

What are the risks involved in a blood transfusion?.....	R1
What are the signs and symptoms of some common transfusion reactions?.....	R2
How do I know if my patient is having a transfusion reaction?.....	R3

Documentation:

Why do we use B Tags in Eastern Health?.....	D1
Why do we use a separate request form (A4) for blood products?.....	D2
Does the patient need to consent to a blood transfusion?.....	D3
What documentation do I need to complete for a blood transfusion?.....	D4

Miscellaneous:

What is the purpose of the pigtails on blood units?.....	M1
What does the Eastern Health Transfusion Committee (EHTC) do?.....	M2
What is a massive transfusion?.....	M3
How much does the Hb increase after 1 unit of blood?.....	M4
When should you check the platelet count after a platelet transfusion?.....	M5
What does platelet refractoriness mean?.....	M6
What is alloimmunisation?.....	M7
What is the difference between antigens and antibodies?.....	M8
What if the patient refuses a blood transfusion? Are there any alternatives?.....	M9



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

ADMINISTRATION

Q. Should you flush an IV line between/after a blood transfusion?

A. It isn't necessary to flush the blood line in-between units = unless drugs such as lasix are to be given. (see Medication through blood line).

The IV set should be changed at the end of the transfusion episode.

Q. Can I use a pump for ALL blood components?

A. Yes. You may use a Gemini pump to transfuse Red cells, platelets, Fresh Frozen Plasma and cryoprecipitate. A pump is especially useful to prevent problems with slow flow rates or clogging. Pumps should also be used when transfusing blood through PICC or CVC lines.

Q. What type of filter do I need?

A. ALL blood components should be transfused through a standard IV blood giving set with an inline filter (170-260microns). Microaggregate filters (orange) are NOT required for routine transfusions (unless the IV line you are using does not contain any inline filter).

Leucocyte depletion filters (disc) are used on an individual patient basis as prescribed.

Q. What are the recommended blood obs?

A. Baseline, 15mins after commencement, 1hour after commencement, then every hour until complete, at end of transfusion, 4 hours after transfusion has completed.

Q. How long should a blood transfusion run for?

A. Red Cells - no longer than 4hours.

FFP, cryo and platelets - stat to 30mins per bag

Q. What IV fluids can I run concurrently with blood?

A. N/Saline

4% albumin

Plasma protein fractions

ABO compatible plasma

Q. What type of IV lines can I use for a transfusion?

A. Equipment posters are available on all wards.

Acceptable IV lines for transfusion include:

- 1) B Braun Sangofix ES 405371 Standard blood administration set - with inline filter
 - 2) Alaris 2477 Blood infusion set for Gemini pump - with inline filter
 - 3) B Braun Sangofix ES with hand pump set - with inline filter
 - 4) Alaris 2420 standard infusion set for Gemini pump - this line has NO FILTER so a microaggregate filter MUST be added to this line
-



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

Q. What medications can I run concurrently with blood?

A. Medication should not be added to any blood line. If drugs are to administered through the same IV line as the blood transfusion, the transfusion should be stopped, flushed with N/Saline, medication should then be administered, the line should again be flushed with N/Saline and the transfusion restarted.

Q. When should you use a blood warmer?

A. It is generally more useful to warm the patient rather than the blood itself. However, blood warmers may be used for:

- Adults receiving an infusion of blood at rates greater than 50ml/kg/hr
- Infants undergoing exchange transfusions
- Patients with clinically significant cold agglutinins

Blood should NEVER be warmed above 41 °C

Q. What type of IV access is acceptable for a blood transfusion?

A. Peripheral IV lines (~18-20G for adults, ~22-24G for paedts)
PICC lines and,
Central lines are all appropriate for a blood transfusion

Q. Can I store blood in a ward fridge?

A. NO. ALL red cells must be stored between 2-6 °C in a 24hour monitored and alarmed fridge. These fridges are only located in EH Pathology Blood Banks.

Q. Why do we need to be so pedantic in the pre-transfusion checking procedure?

A. Most transfusion reactions are caused by preventable clerical errors. The pre-transfusion check is the final area of safety for the patient. Being so pedantic helps to ensure that there have been no errors up to this point. It is the last chance to ensure the patient is receiving the safest and most appropriate blood product. Correct patient and product identification at this point is vital to help reduce risks to the patient.

Q. What should I look for when visually checking the unit of blood prior to transfusion?

A. Once all the labelling has been verified you should examine the pack itself for:

- Signs of damage or leakage (gently squeeze the pack to ensure no leaks)
- Discolouration or turbidity (blackish colour or froth is not good)
- Presence of clots or haemolysis

If you have any doubts about the quality of the blood, do not commence transfusion and return it to the Blood Bank.



Blood Transfusion Frequently Asked Questions (F.A.Q's)

Q. How often do I need to change the IV giving set when transfusing blood?

A. The IV giving set can be used for the entire transfusion episode. If you note that the IV line is becoming clogged, you should replace it with a new blood line.

The IV line used for blood transfusion must be changed at the completion of the transfusion episode to remove potential sites of bacterial proliferation.

Q. Why should you avoid giving transfusions overnight?

A. Patients need to be clearly visible to staff during a transfusion. There are generally less staff on duty overnight and the patient is trying to rest. Adverse reactions may be harder to recognise and manage overnight. Transfusions should only be given overnight if absolutely necessary.

Q. Why should we start a transfusion within 30mins of release from Blood Bank?

A. Once red cells have been removed from the fridge their temperature starts to increase. As the temp increases the risk of bacterial proliferation also increases. 30 mins is the time in which a unit of blood that has not been commenced, can be safely returned to the Blood bank fridge for release to another patient. Any unit returned to the Blood Bank after 30mins at room temperature is discarded.

Q. Why is only 1 unit of blood released for use at a time? Why can't I collect multiple units at once?

A. Unless the patient is actively bleeding, you shouldn't need more than 1 unit of blood at a time.

In the past, when 2 or more units have been released at once, the 2nd or 3rd unit will be sitting at room temperature for longer than the recommended 30mins. If it is not then transfused to the patient and has been out of the fridge greater than 30mins then the unit must be discarded. The release of 1 unit at a time for non-urgent transfusions helps to reduce unnecessary wastage.

For massive urgent transfusions, you will receive all the blood you require as soon as it is available.



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

SPECIMENS

Q. How long after a blood transfusion should a check Haemoglobin (Hb) be performed?

A. A check Hb should be performed after 24 hours even if an earlier Hb is known.

Q. Why do we have Zero Tolerance?

A. Errors can occur at any point in the transfusion process, from initial specimen collection to administration. Specimens that have not been adequately labelled pose a high risk to the patient as all transfusion decisions are based on the original sample.

Wrong blood in the tube has been frequently identified along with incorrect patient details (another patient's label). Processing of a specimen that does not meet the strictest criteria may result in serious adverse effects for the patient such as incompatible blood being released. This can have a devastating effect.

Zero Tolerance on all specimens collected for crossmatch is a way of ensuring appropriate care has been taken with patient identification.

Q. How soon after giving FFP should an INR be performed?

A. 6-12 hours after intervention. If there is active bleeding then clinical parameters are more useful and more frequent INR monitoring can be done.

Q. Why is there a 72 hour limit on crossmatch?

A. Specimens for crossmatch need to be taken as close as possible to the transfusion time. This is because the patient may develop antibodies between specimen collection and transfusion, rendering the crossmatch result invalid.

Q. Why are patient labels acceptable on a G+H or crossmatch specimen? Why don't we have to handwrite the details?

A. Handwritten details may be illegible requiring the patient to be re-bled. Sometimes when details are handwritten, not all required information is provided (i.e. initials for given name, incorrect spelling of patient name).

Printed patient labels are easy to read. The collector's signature, date and time are handwritten on the label to show that appropriate attention has been paid to all points of identification and that it has been verified as correct.

Q. Why can't I pre-label blood specimen tubes?

A. Pre-labelled specimen tubes pose a much greater risk for the patient. The person collecting the specimen may become distracted and bleed the wrong patient (which happens more than you think). If you have many patients to bleed and all tubes are pre-labelled the risk of wrong blood in the tube increases even more. Specimens should be collected from one patient at a time and labelled immediately after collection at the bedside.



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

PRODUCTS

Q. What is the difference between pooled and apheresis platelets?

A. Pooled platelets are made from multiple donors (equivalent to 4 or 5 donors) and are ~160mls per bag. Apheresis platelets are from a single donor and the volume is less than that of pooled platelets ~100mls.

Q. What does Buffy Coat Poor mean?

A. The Buffy Coat is a layer of white cells and platelets (found between the red cells and plasma after whole blood has been spun down into its components).

Buffy Coat Poor refers to the fact that the buffy coat layer has been removed/reduced during processing. So a Buffy Coat Poor unit will have less white cells and platelets than a standard unit of blood.

Q. What does leucocyte depleted mean?

A. There are 2 methods of leucodepletion (reducing white blood cells).

Pre-storage leucodepletion (performed at ARCBS) - The white blood cells have been filtered out to less than 1×10^6 during processing.

Bedside leucodepletion - use of a leucocyte filter (disk) at the bedside.

Leucocyte depleted blood is commonly used to reduce the frequency of febrile non haemolytic transfusion reactions, reduce the risks of alloimmunisation (see alloimmunisation section) and reduce the risks of certain transfusion transmitted infections.

Bedside leucodepletion is not as effective as pre-storage leucodepletion.

Q. Why and when would I give irradiated blood?

A. Irradiated blood means that the unit has been exposed to a set dose of gamma irradiation. This is done to prevent proliferation of viable T-lymphocytes (white blood cells) which are the immediate cause of Transfusion-Associated-Graft-Versus-Host-Disease (TAGVHD).

Indications for irradiated blood are (see EH Policy for greater detail):

- i. To prevent TAGVHD - a rare but usually fatal (~90%) complication of transfusion
 - ii. Oncology/Haematology patients
 - iii. Neonates
-



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

Q. What is the significance of CMV negative blood?

A. Cytomegalovirus (CMV) is a common virus usually only of concern in immunocompromised patients and infants. It may be transmitted via breast milk, through sexual contact and by blood transfusion. For this reason it is recommended that particular groups of patients, who are at risk of getting severe consequences of CMV infection, receive blood that has been tested and found negative for CMV exposure.

CMV negative blood is broadly indicated for:

- CMV negative patients (including pregnant women)
- Neonates
- Severely immunocompromised patients

Q. How are all the different blood components stored? For how long?

A. Red Cells (between 2-6°C) for up to 42 days
Platelets between (20-24°C) for up to 5 days on a continuous agitator
FFP and Cryo (frozen to -25 °C or below) for up to 1 year

Q. What do I need to know about Albumin?

A. Albumex 4 and Albumex 20 are both protein solutions made from human albumin. They are plasma expanders and may be infused through a filtered or non-filtered IV line.

Albumex 4 indications: (Albumex 4% is compatible with red cells)

- Shock associated with significant hypoalbuminaemia
- Therapeutic plasmapheresis
- Cardiothoracic surgery

Albumex 20 indications:

- Extremely low albumin in critically ill patients
- Burns
- Paracentesis of ascites in patients with cirrhosis or when the volume exceeds 6L
- Haemodialysis

Q. What do I need to know about Intragam P?

A. Intragam P is a normal intravenous immunoglobulin (IVIG) made from human plasma. It is used to boost the immune system.

Indications for Intragam P:

- Primary immunodeficiencies
- Immunological disorders
- Neurological disorders (such as Guillain Barre syndrome)
- Haematological disorders (such as idiopathic thrombocytopenic purpura ITP)

Intragam P should be administered through a standard intravenous blood infusion set, which contains an integral standard in-line filter (170 - 260 microns).



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

Q. What do I need to know about Sandoglobulin?

A. Sandoglobulin is a normal intravenous immunoglobulin (IVIg) made from human plasma. It is given to help the body fight infection.

Indications for Sandoglobulin are:

- Primary antibody deficiency
- Idiopathic Thrombocytopenic Purpura (ITP)

Sandoglobulin should be administered through a standard intravenous blood infusion set, which contains an integral standard in-line filter (170 - 260 microns).

Q. What do I need to know about Anti-D?

A. Rh (D) immunoglobulin (Anti D) is a human immunoglobulin. It prevents the sensitisation and production of the Rh (D) negative mothers antibodies formed against her Rh (D) positive baby. This removes foetal cells from the mother's circulation so that sensitisation does not occur.

Anti-D should be administered to Rh (D) negative women:

- Routine antenatal prophylaxis
- Following antenatal "sensitising" events
- Following the birth of a Rh (D) positive baby

It is given as an IM injection (refer to Birralee and EH policy for greater detail).

Q. What do I need to know about Prothrombinex (PTX)?

A. PTX contains coagulation factors 2, 9 and 10 and is made from human plasma. PTX is filtered and heated in a dry state to decrease the potential for viral transmission.

Indications for PTX are:

- To treat bleeding in patients with deficiencies of factor 2,9,10.
- For warfarin reversal

PTX comes freeze dried and should be reconstituted using the supplied "water for injection BP". Each vial is reconstituted with 20mls of diluent. Once the powder has dissolved, the prescribed dose is drawn up into an appropriate sized syringe. It is administered as a slow IV push (~3ml/min or as tolerated by pt.). PTX must not be stored once reconstituted and should be administered within 3 hours.

Recombinant factor IX (BeneFix®) is the preferred treatment for patients with Haemophilia B (Christmas Disease).



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

Q. What do I need to know about Biostate?

A. Biostate contains factor 8, a protein which is essential for normal blood clotting. It is made from human plasma and undergoes solvent detergent and dry heat treatment to decrease the potential for viral transmission.

Indications for Biostate are:

- The treatment and prophylaxis of bleeding associated with factor 8 deficiency (Haemophilia A and von Willebrand's disease).

It comes freeze dried and should be reconstituted using the supplied "water for injection BP". Each vial comes with its appropriate amount of diluent. (5mls for 250IU, 10mls for 500IU). Once the powder has dissolved, the prescribed dose is drawn up into an appropriate sized syringe. It is administered as a slow IV push (usually within 5 mins, or as tolerated by pt.). Biostate must not be stored once reconstituted and should be administered within 3 hours. Recombinant factor VIII (Recombinate®) is the preferred treatment for patients with Haemophilia A (DHS policy 04).

Q. Why is autologous blood not encouraged?

A. Autologous - donating your own blood for your own use.

Many people are concerned about viruses in donated blood and feel safer if they can receive their own blood. Patient's wishing to receive autologous blood have to meet strict criteria and not everyone will be eligible.

However, the biggest risks in transfusion are not viral, they are clerical errors. Labelling and patient identification errors pose a much greater risk than viral transmission and can still occur if you are being transfused with your own blood. The risks of bacterial infection also remain. So it is really no safer to use your own blood.

Q. What does HLA matched mean?

A. HLA - human leucocyte antigen plays a central role in the induction and regulation of immune responses. This is responsible for some serious clinical complications of transfusion. HLA's are one of the main barriers to the success of solid organ or bone marrow transplantation and alloimmunisation can be seen in patients following transplantation or blood transfusion.

To prevent these problems, sometimes a patient will require an HLA matched blood transfusion. This is requested in order to prevent alloimmunisation (see alloimmunisation section).

It is important to note that any blood product marked as "HLA matched" has been specifically matched to the patient for which it was requested. HLA matching overrides all other requirements including ABO and Rh (D) compatibility.



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

Q. What does Novoseven do?

A. Novoseven (Novo7) is an activated recombinant factor VII and is used mostly in Haemophilia patients with antibodies.

Within EH there may be some benefit in using Novo7 for massive transfusion to control bleeding after other blood components have been transfused.

Novo7 must only be reconstituted with sterile water (a 1.2 mg vial is reconstituted with 2.2ml water). It is administered as a bolus IV injection over 2-5 mins. The half life of Novo7 is 2 hours. Novo7 must not be stored once reconstituted and should be administered within 3 hours. The use of Novo7 **MUST** be determined and approved by the Haemostasis/Thrombosis Consultant for each individual case. (see the Massive Transfusion policy)

Q. What is each unit of blood in Australia tested for?

A. Every unit of donated blood is tested for:

- ABO and Rh (D) group
- Red cell antibodies
- HIV 1 and 2 and RNA
- Hepatitis B surface antigen
- Hepatitis C antibody and RNA
- HTLV 1 and 2
- Syphilis

After the infectious disease screening tests, if any unit is confirmed reactive, it is destroyed. Blood is only released for use if it has satisfactory results.

Q. What is a directed donation?

A. A donation collected for a specified patient from a selected donor who is known to the patient. This is most commonly requested between parents and children. There is no evidence to indicate that this is safer than a homologous transfusion.

Q. Why don't we keep thawed FFP ready for use in EH?

A. The shelf life of thawed FFP ranges from 24 hours to 5 days (depending on intended use). At Eastern Health, our demand for FFP is not high enough to warrant this decreased storage time and possible subsequent wastage of units.



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

Q. What blood groups are compatible?

A.

Red cells

Patient blood group Compatible blood group

O Pos	O pos, O neg
O Neg	O neg
A pos	A pos, A neg, O pos, O neg
A neg	A neg, O neg
B pos	B pos, B neg, O pos, O neg
B neg	B neg, O neg
AB pos	any group
AB neg	AB neg, A neg, B neg, O neg

Plasma

Patient blood group Compatible blood group

O	O, A, B or AB
A	A or AB
B	B or AB
AB	AB (A or B if AB unobtainable)

Platelets and Cryo - as per availability through Blood Bank



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

RISKS/ADVERSE EVENTS

Q. What are the risks involved in a blood transfusion?

A. The biggest risk in a blood transfusion is caused by clerical errors.

Estimated risks are as follows:

- Allergic reaction - 1-3% of plasma infusions
- Febrile non haemolytic transfusion reaction (FNHTR) - 1:100
- Circulatory overload - up to 1% of patients
- Delayed haemolytic transfusion reaction - 1:4,000-9,000
- Transfusion Related Acute Lung Injury (TRALI) - 1:5,000-10,000
- ABO incompatibility - between 1:12,000-77,000
- Bacterial infection - variably reported to be 1:100,000 platelets, although probably under-reported
- Anaphylaxis - 1:20,000-170,000
- HIV (antibody and NAT testing) - 1:7,299,000
- Hepatitis C (antibody and NAT testing) - 1:3,663,000
- Hepatitis B - 1:1,339,000
- HTLV 1 and 2 - considerably less than 1:100,000
- Variant Cruetzfeldt-Jakob disease (vCJD) - possible. No cases reported in Australia.
- Post transfusion purpura - rare
- Transfusion-Associated-Graft-Versus-Host-Disease (TAGVHD) - rare
- Metabolic complications - variable
- Iron overload - not known. Risk should be considered with chronic transfusions >20 units
- Immune modulation - not known

Q. What are the signs and symptoms of some common transfusion reactions?

A. Transfusion reactions can occur with any blood component and all patients should be closely monitored as per hospital policy.

Common adverse reactions are:

- Localised or generalised rash, itching, hives and wheals
- Rigors, chills, shivering
- Fever

All suspected transfusion reactions should be reported on the B Tag and Blood Bank notified. The attending MO should complete the Transfusion Reaction Investigation Request Form as appropriate (available on the Blood Matters webpage)

Q. How do I know if my patient is having a transfusion reaction?



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

A. Look out for any signs and symptoms as listed on the Acute Transfusion Reaction Flow Chart (available on all wards and the Blood Matters webpage).

Ask the patient to report anything different from how they felt prior to commencement of the transfusion.

DOCUMENTATION

Q. Why do we use B Tags in Eastern Health?

A. B Tags are used to increase the capture and reporting of transfusion related events. "Real time" data is collected on every unit of red cells, platelets, FFP and cryo transfused within EH. B Tags establish an outcome on every unit transfused. All reported events and problem areas are followed up and strategies implemented to prevent these events from re-occurring.

Q. Why do we use a separate request form (A4) for blood products?

A. Blood bank specimens and requests require very detailed information as an inappropriate transfusion can have severe clinical consequences. Detailed clinical notes are vital and all requests for transfusion must fit within strict criteria.

The separate A4 request form contains fields that are not required on non blood bank specimens. These are:

- Indication for transfusion (as per NHMRC guidelines on back of form)
- Transfusion history
- Transfusion specific requirements

The A4 request form provides prompts for the clinician so that the safest and most appropriate blood component may be provided.

Q. Does the patient need to consent to a blood transfusion?

A. Informed patient consent should be obtained for any procedure. However the issue of written consent for blood transfusion is the subject of much debate.

Current consent forms across EH hospitals may contain a section on blood transfusion. You need to check your individual hospital consent form to see if written consent is required.

Q. What documentation do I need to complete for a blood transfusion?

A. There are many forms that surround a transfusion. These include:

- Compatibility report (released from Blood Bank)
 - IV orders
 - Fluid Balance Chart
 - Obs chart
 - Progress Notes
 - B Tag
-



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

MISCELLANEOUS

Q. What is the purpose of the pigtails on blood units?

A. The pigtails are used by the EH Blood Bank to confirm the ABO and Rhesus (D) group on every unit of blood that arrives in EH. They may also be used for testing returned units implicated in transfusion reactions.

Q. What does the Eastern Health Transfusion Committee (EHTC) do?

A. The purpose of the EHTC is to promote transfusion best practice through the enhancement of transfusion awareness and education, facilitation of policy development, and monitoring and review of the use of blood and blood products and adverse incidents involving these products. The EHTC reports to the EH Clinical Executive. A quarterly newsletter "Transfusion News" is sent to all Department Heads to keep staff updated on EHTC activities.

Q. What is a massive transfusion?

A. A massive transfusion is defined within EH as the transfusion of 4 units of red cells in one acute episode, with ongoing transfusion requirements.

Typically, a massive transfusion will involve Haematology and other senior consultant and Blood Bank involvement.

In addition to Red cells, FFP, platelets and cryo are also transfused. This may then be followed by novoseven.

For further details refer to the EH Massive Transfusion Procedure (available on the EH intranet policy manual)

Q. How much does the Hb increase after 1 unit of blood?

A. 1 unit of red cells will generally increase the Hb by approx. 10g/L

Q. When should you check the platelet count after a platelet transfusion?

A. About 15-30mins after transfusion. A bag of pooled platelets should increase the platelet count by $50 \times 10^9/L$.

Q. What does platelet refractoriness mean?

A. Refractoriness to platelets may occur following HLA alloimmunisation. This means that the survival time of the transfused platelets may be shortened. Patients who are alloimmunised may rapidly clear transfused platelets resulting in an inadequate platelet response. So their platelet counts may not increase as expected after transfusion.



Blood Transfusion

Frequently Asked Questions (F.A.Q's)

Q. What is alloimmunisation?

A. The presence of antibodies directed against HLA antigens. Alloimmunisation can develop after exposure to white blood cells (in a red cell or platelet transfusion) or pregnancy. This risk increases with multiple blood product exposure.

The risk of alloimmunisation can be decreased by transfusing blood products that contain minimal white cells. This in turn reduces the risks of poor increments (i.e. minimal rise in platelet count after transfusion) and reduced bleeding.

Q. What is the difference between antigens and antibodies?

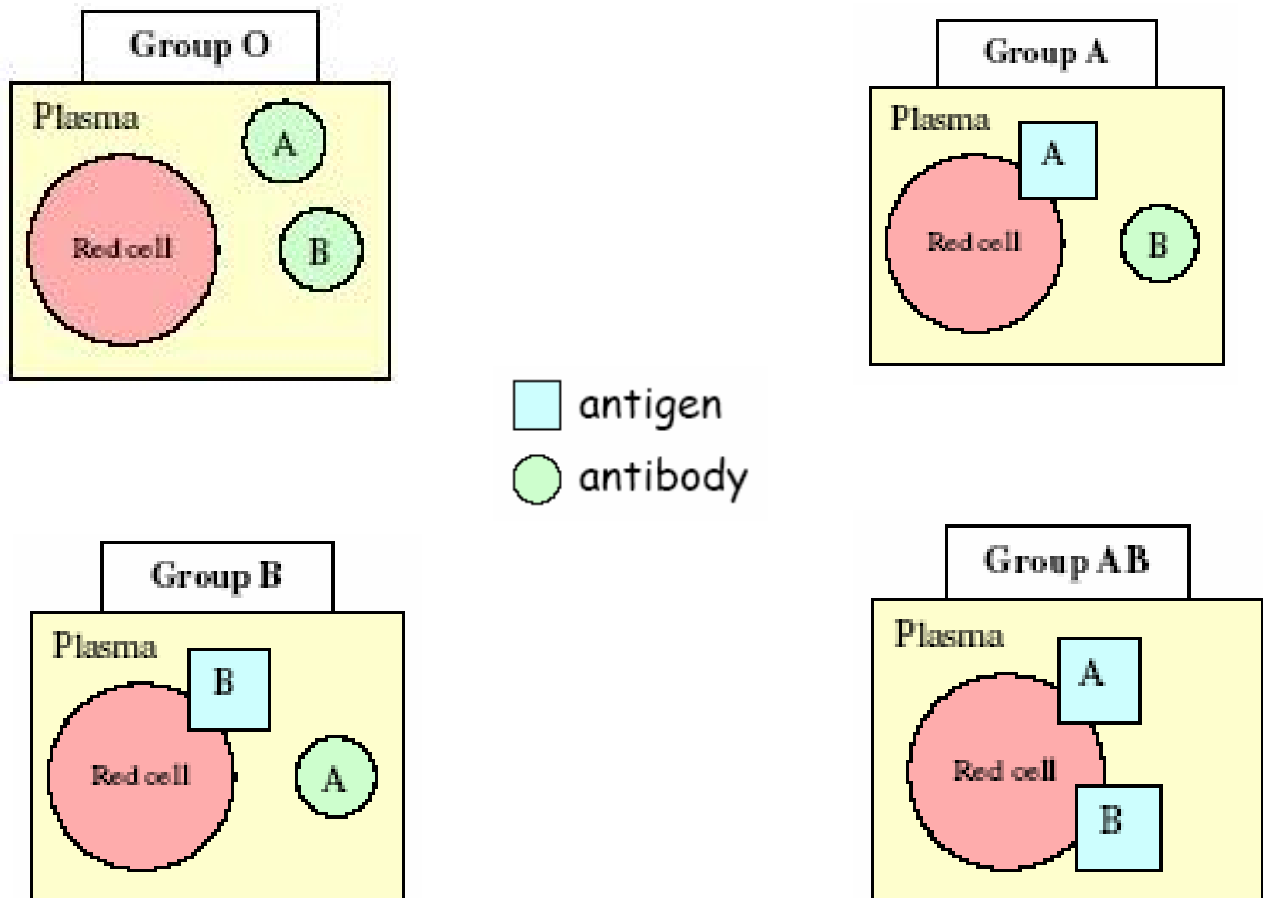
A. Antigens - a substance that stimulates an immune response. They also determine your blood group (i.e. if your red cells express A antigens then your ABO blood group is Group A).

Antibodies - respond against antigens (the invasion of a foreign substance).

Antibodies always attack antigens of the same name.

That is, if you are blood group A (which means you have A antigen on your red cell and B antibodies circulating in your plasma) and you receive a transfusion of group B red cells (which are covered with B antigens), your body will attack the invasion of foreign blood.

See picture below for further detail:





Blood Transfusion

Frequently Asked Questions (F.A.Q's)

Q. What if the patient refuses a blood transfusion? Are there any alternatives?

A. Patients can refuse a blood transfusion for a variety of reasons. A patient who refuses a blood transfusion will need to complete a "Refusal of Treatment" form (MREH 0.4) and should not receive a blood transfusion under coercion.

There are some alternatives but these may not be appropriate for all patients. Discussion between the patient and doctor must take place to determine the most acceptable course of action.

Alternatives to transfusion are broadly listed below:

- Pharmacologic approaches
- Marrow Stimulation
- Blood Substitutes

Further information can be obtained from the Transfusion Team - contact details on the Blood Matters webpage

If you have any questions that have not been answered here, please contact a member of the Transfusion Team or call your hospital Blood Bank.

Transfusion Team:

Dr. Sukanya Roy	(Haematopathologist)	sukanya.roy@boxhill.org.au
Dr. Michael Tong	(Haematologist)	Michael.tong@boxhill.org.au
Dr. Andrew Wei	(Haematologist)	Andrew.wei@boxhill.org.au
Dr. Hang Quach	(Haematology Registrar)	hang.quach@boxhill.org.au
Janine Carnell	(Transfusion Nurse)	janine.carnell@boxhill.org.au (maternity leave 2006)
Claire Gray	(Transfusion Nurse)	claire.gray@boxhill.org.au

Blood Bank contact numbers:

Angliss Hospital	9764 6136
Box Hill Hospital	9895 3487
Maroondah Hospital	9871 3572