National Transfusion Advisory Group *NTAG*

Plain English Approved by NALA

You may need a blood transfusion

This leaflet is designed to help you and your family understand what a blood transfusion is and how you can help make this a safer treatment for you.

Your doctor or nurse will explain if you are likely to need a blood transfusion and why. They will ask your permission to give you a blood transfusion. This means you share the decision to receive a blood transfusion. If you are unconscious, your doctor must treat you in your best interest. This includes giving you a transfusion without getting permission from you. (See Q9.)

Ask your doctor or nurse any questions you have about this information.

This leaflet explains

1. What is a blood transfusion?

A blood transfusion is when donated blood is given to a patient. Blood donors generously volunteer to donate to the Irish Blood Transfusion Service (IBTS) to make sure this treatment is available for you. They are not paid.

Blood has different components (see Q6. 'What do the different blood components do?'). You may be transfused with one or more of the following blood components:

- red cells
- platelets
- plasma.

2. Why would you need a blood transfusion?

Blood transfusions save lives

If you lose a lot of blood: If you are bleeding a lot, we may give you red cell transfusions, for example, after an injury or after delivering a baby.

Red cell transfusions also replace blood loss in operations (like hip replacement).

If bone marrow is not working properly: You may need red cell and platelet transfusions if your bone marrow is not working properly. The bone marrow is where red cells and platelets are made. Diseases or cancer treatment may stop your bone marrow working. After chemotherapy or radiotherapy, bone marrow may take up to a month to recover.

Genetic conditions: Some people have genetic conditions, like sickle cell disease, which interfere with their haemoglobin. Haemoglobin is responsible for transporting oxygen around the body. People with these types of diseases need lifelong blood transfusions.

3. What are the risks of blood transfusion?

Risks vary depending on your health and the transfusion itself

Mild reactions are common but serious harm is uncommon and happens with less than one in 17,000 components of blood issued. (Read more about this in the UK report of serious reactions to transfusion, Annual SHOT Report 2019. SHOT stands for Serious Hazards of Transfusion.)

Examples of reactions to transfusions include

Increase in temperature: This is the most common reaction after transfusion but is usually mild.

Allergic reactions: A rash or other signs of allergy can occur particularly after platelet or plasma transfusion. If this happens to you, you may be treated with medication.

Transmission of infection: This is now rare. Blood donors are screened before they donate blood. Patients who have received a transfusion are not allowed to be donors. We test every blood donation for infections that can be passed by transfusion. The tests include viruses and bacteria that cause infections like:

- hepatitis (Hepatitis B, C and E)
- AIDS (HIV)
- Syphilis

We discard donations that show these infections on our tests. Even with these precautions, there is a very low risk for the transfusion to give you an infection. For example, if a donor developed a new infection in the few days before donation, which could not be detected. This residual risk is set out at the end of the leaflet (see Further information) which is lower than all other transfusion complications.

Developing antibodies: One patient in 300 may develop antibodies to red cells if they receive more than one blood transfusion. These antibodies attack red cells that are not your exact type, and this can harm you.

If this happens to you, we will need to do more tests to match your blood more exactly in future transfusions, and during pregnancy in case the antibodies could harm your baby's red cells. This means that if you are likely to become pregnant, we must tell you and your family doctor about the antibodies.

TACO: Transfusion Associated Circulatory Overload (TACO) is the **most serious** risk of blood transfusion. It causes breathing difficulties that can be serious. This is more likely to happen if the transfusion is given too quickly or in too large a volume for you. TACO is more likely if you have heart failure or have had other fluid into your vein while you are not bleeding. It may happen with transfusion of a single unit.

Mismatch: The second most serious risk is not getting the blood transfusion that matches your blood group. Healthcare staff can prevent this happening by making sure there are no mix ups when the blood sample is taken from you to match with the blood transfusion.

Your healthcare staff will be aware of these risks when they assess you. They will ask you about:

- previous blood transfusions
- transfusion reactions
- any special transfusion needs you may have.

They will adjust the transfusion or prescribe extra medication for you, if needed. They will also explain any special requirements for your transfusion.

By Irish law, we must report serious reactions to transfusion. We do not use your name in these reports. We send these reports to the National Haemovigilance Office (NHO). This is called a 'Haemovigilance system'.

4. Can you avoid a blood transfusion?

Your symptoms together with laboratory test results like haemoglobin and platelet count show if you need a transfusion: Healthcare staff are educated to transfuse you only when absolutely necessary. They will assess your symptoms and your laboratory test results to decide if you need a transfusion.

One unit of blood at a time: If you are not bleeding, you should receive a single red-cell unit transfusion. After this, you should be reassessed to decide if you need another transfusion.

Anaemia: If you are anaemic, treating you with iron replacement or other nutrients might be enough. For some patients, we need to find out what is causing the anaemia to give the right treatment and you may need more tests.

Operations and pregnancy: Before a planned operation and during pregnancy you can take steps to improve your iron stores and reduce bleeding. Healthcare staff should check to see if you are anaemic and if you are at risk of bleeding. They should treat your anaemia and may change your medication if necessary to reduce bleeding. This **may** mean you can avoid a blood transfusion.

You may get medication to reduce the risk of bleeding during an operation and some hospitals can recycle your own blood. This means they can use a 'cell salvage' machine. This is a machine that captures the blood you loose and returns it immediately to you.

You cannot donate blood for yourself: The Irish Blood Transfusion Service does not allow patients to donate blood for their own use before an operation. This is because there is no evidence to show this is safer. European Regulations state that taking donations from family or friends (directed donations) is not good practice.

5. How is a blood transfusion given?

Healthcare staff are trained in safe practices

Taking your blood sample is the first step: Healthcare staff should immediately label your blood sample before leaving your side. The label should include your identifying information to prevent a mix-up with another patient's sample.

Hospital staff must ask you to give your:

- full name
- date of birth.

If you are an in-patient, you should wear your hospital identification band, which will have your patient identification number. Hospital staff should check it. When this band has information in barcode format that allows electronic scanning, a handheld scanner can be used to print a label for your blood sample.

Testing: Your sample is then sent to the hospital blood bank for testing. This confirms your ABO blood group (this may be O, A, B or AB) and your Rhesus group (positive or negative). Your sample is matched against a suitable blood component for you.

Getting your blood component to you: Healthcare staff will collect the blood component selected from the laboratory. Again, it is vital that staff check the intended component for you before your transfusion starts. This ensures that you are getting the right component.

Transfusion: Using a sterile needle and plastic tubing, your healthcare staff will connect the blood transfusion to you, usually through a vein in your arm. Red cell components are fully transfused within two-four hours and plasma and platelets within 30 minutes and one hour. The blood component will be transfused more quickly if you are bleeding or for other reasons.

Checking for a reaction: Your healthcare staff will closely supervise you during the transfusion in case you develop a reaction. One out of every 100 patients may develop a mild reaction. The first 15 minutes are especially important. Before, during and after the transfusion, we will check and record your:

- pulse
- blood pressure
- temperature
- rate of breathing.

6. What are the different blood components?

Red blood cells carry oxygen from our lungs to our body and return carbon dioxide back to the lungs to be exhaled. The haemoglobin (Hb) part of the red cell has this important job. When Hb is low, this is called anaemia. It may result in not enough oxygen being carried to vital organs like the heart. If Hb drops suddenly (for example with bleeding), this may cause you immediate harm and you may need a blood transfusion.

Platelets are the body's initial response to bleeding. They form a plug on which clotting factors form a clot. Platelet transfusions are given to stop or prevent bleeding.

Plasma is the fluid part of blood in which our red blood cells and platelets are suspended. It contains clotting factors and is transfused when these are low, for example with bleeding or liver disease.

7. What should the patient do to ensure safe blood transfusion?

You have a vital role in making sure that you are identified correctly:

Make sure your identification information is correct: If the name or date of birth on your hospital identification band is incorrect, please tell your healthcare staff.

When the staff member is taking your sample to match your transfusion, make sure they check who you are, Even if they know you, they should ask you (but not prompt) your:

- full name
- date of birth.

They should then check this against your hospital identification band.

Please remind the clinical staff if you have:

- had a reaction to a blood transfusion in the past
- been told you have special transfusion needs.

And you must let your healthcare staff know if you have any unpleasant feelings or symptoms during or after your transfusion. The symptoms are listed on the next page.

Symptoms during or after a transfusion can include:

- headache
- rash
- nausea
- vomiting
- fever
- chills
- shaking
- breathing difficulties.

These symptoms occur mostly within 24 hours. Healthcare staff are familiar with these and if needed, they will:

- stop the transfusion
- take blood tests and treat your symptoms.

Other safety measures in place: If you are transfused as an out-patient, your healthcare staff will give you a phone number to call the hospital in case you develop a reaction after you leave hospital.

If you have special transfusion needs, it is recommended that you receive an 'alert' card from your hospital. Special transfusion needs could, for example, be irradiated blood which is needed for some patients with cancer or receiving particular medication. Also, the computer system in the hospital blood bank will have a warning flag to ensure that only blood that suits your special needs may be issued from the laboratory for you.

8. Transfusion records – how long are they kept?

The IBTS and hospitals must hold donor and transfusion records, including personal details, for 30 years. An 'archive' sample of blood from each donation to the IBTS is held for 10 years.

9. What happens if you refuse a blood transfusion?

You may not agree to a transfusion and can change your mind

You may decide not to give permission for a blood transfusion. If you do not give permission, you should know that while many people can tolerate symptoms of anaemia, there are some patients who are at greater risk of doing poorly if they do not have a blood transfusion.

These include:

- bleeding patients
- older patients
- patients with compromised heart and circulation (cardiovascular disease).

You should discuss this fully with your consultant before planning surgery and pregnancy. Some hospitals are developing policies to avoid blood transfusion, these are called '**Bloodless pathways'**. These facilities vary between hospitals and even when they are in place, you may be advised that you need a transfusion.

Advance Healthcare Directives (AHD)

Irish legislation (Part 8 of the Assisted Decision-Making (Capacity) Act 2015) sets out a legal framework for AHDs, but it is not yet fully the law. An AHD is a document which any person over 18 can write with instructions on the kind of healthcare treatments they want, or wish to refuse, when they no longer have capacity to do so. For example, a person may develop dementia and can no longer decide on treatment. If you do not wish to receive a blood transfusion for any reason, including religious or cultural, you can state this in your AHD. It is wise to let your family and GP know you have an AHD and your wishes.

Healthcare staff respect advance healthcare planning when they are aware there is an AHD for a patient. The courts also increasingly recognise and respect a person's AHD. However there is **no** legal requirement on health staff to respect the patient's AHD. This legal situation will change when the Act is fully in place.

Further information

This section gives you some statistics about the remaining risk of viral infection from transfusion in Ireland, and the statistics around misidentifying a patient.

Remaining risk of viral infection from transfusion in Ireland

Current safety measures reduce the risk of getting a viral infection from a transfusion.

Examples:

- The risk of getting Hepatitis B virus is now about 1 in 5 million donations.
- The risk of getting HIV is about 1 in 9 million donations.
- The risk of getting Hepatitis C is about 1 in 12 million donations.

(The above figures are from the IBTS)

In comparison, the risk of dying on Irish roads in 2020 was 30 people for every 1 million people living in Ireland. (This figure is from the Road Safety Authority)

Misidentification – This means mixing up the patient when a blood sample is taken or when the transfusion is given. The wrong ABO blood group is transfused in 2 per million transfusions and most of these errors are caused by misidentification.

This leaflet was prepared by a working group of the National Transfusion Advisory Group (*NTAG).*