



A Guide to Patient Blood Management Information for Patients

What is Patient Blood Management (PBM)?

- PBM is a **proactive patient-centred approach** and works through detecting, diagnosing and treating anaemia appropriately, depending on the underlying cause of the anaemia.
- **Anaemia** is a condition in which your body has insufficient healthy red blood cells to carry adequate oxygen to your organs and tissues.
- Anaemia is most often caused by a shortage of iron but can also be due to other reasons.
- Apart from anaemia, PBM focuses on the problems of **blood loss** and **bleeding disorders** and aims to lessen blood loss.
- With better management, patients may require fewer or avoid transfusion of donated blood components.
- However, if a transfusion is needed, PBM ensures that patients are given the correct amount and type of blood component and that the transfusion is given safely.

Optimising red blood cell mass and iron stores

Minimising blood loss

Improved patient outcomes

Patient centered decision making

Optimising how patients cope with anaemia



What does PBM Achieve?

- Improves patient safety
- Reduces hospital length of stay
- Faster recoveries
- Decreases the risk of hospital acquired complications and infections

Who can Benefit from PBM?

Anyone who may need transfusion, including:

- Surgical patients
- Pregnant women
- Women of reproductive age and children
- Patients with iron deficiency or other micronutrient deficiencies such as folate and vitamin B12
- Patients with chronic diseases such as chronic heart failure or kidney disease
- Patients with cancer



Iron Deficiency Anaemia



It is the most common cause of anaemia world-wide.

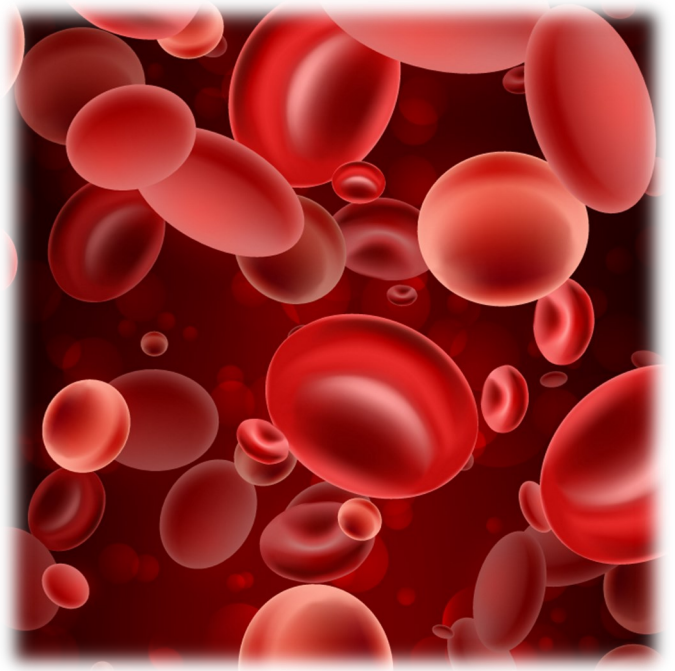
Possible reasons that may lead to a lack of iron:

- **Pregnancy or childhood growth spurts** – these are times when you need more iron than usual
- **Heavy menstrual periods** – the amount of iron that you eat may not be enough to replace the amount that you lose from heavy periods
- **Bleeding from the gut** – some conditions of the gut can bleed enough to cause anaemia. You may not be aware of losing blood this way
- **Not eating enough foods containing iron** – vegans and vegetarians need to take particular care to ensure that they get enough iron in their diet
- **Poor absorption of iron** – this may occur with some gut diseases

Talk to your doctor or nurse if you think you are at risk.

You can boost your iron level by:

- Consuming more iron rich food: www.hsa.gov.sg/iron
- Iron therapy using either tablets or through a drip
- Iron deficiency anaemia does not usually require blood transfusion, unless you are very unwell.



The Role of Blood in Your Body

Red blood cells bring oxygen to your organs and tissues. Oxygen is carried and released by haemoglobin, a protein present in red blood cells.

A lower than normal haemoglobin level is called anaemia. Anaemia is a condition that should not be left untreated.

Your doctor can test your blood to determine your haemoglobin level. Your haemoglobin level tells your doctor if your body has enough red blood cells.

Definition of anaemia:

- **Male 15 years or above:**
Less than 13g/dl
- **Female 15 years or above (non - pregnant):** Less than 12g/dl
- **Female (pregnant):**
Less than 11g/dl

Strategies to Enhance Red Blood Cell Production and Minimise Blood Loss

Before Operation

- Have a full blood count taken **14 to 45 days** before your operation to check for anaemia. This allows your doctor or nurse to optimise your health status well ahead of your treatment.
- Anaemia is most often caused by a shortage of iron. Depending on the reason for your anaemia, you may need treatment with **iron therapy, vitamin B12 or folic acid**.
- Discuss with your doctor or nurse the need to **stop or withhold certain medications** such as warfarin and aspirin, to reduce your risk of bleeding. Do not stop taking any medications without consulting your doctor or nurse first. Also, if you stop taking certain medications, check when you should restart taking them.
- For selected patients, it may be appropriate to use a drug which is a synthetic form of the hormone **erythropoietin (EPO)** to boost haemoglobin production.

During Operation

- Your doctor may suggest having your blood collected and returned to you, during some types of major surgery. This is called intra-operative cell salvage.
- Advanced blood monitoring tools and certain medications can be used in the operating theatre to reduce bleeding.
- Certain surgical techniques and instruments can prevent or minimise blood loss.

After Operation

- Your body has a natural ability to adapt to anaemia.
- Although blood transfusion can be life-saving in patients who are bleeding heavily, studies have shown that patients who are well with moderate anaemia may not benefit as much. It may subject them to the unnecessary blood transfusion and its associated risks.





How can I be part of the decision-making process in PBM?

- Talk to your doctor or nurse if you think you may benefit from PBM.
- If you are due for an operation or need blood transfusion for your underlying medical condition, discuss with your doctor or nurse on a suitable PBM plan for you.
- Your doctor or nurse should explain transfusion indications, risks, benefits and alternatives available to you prior to your operation or blood transfusion.
- You may wish to ask some questions such as:

- ⇒ **What is my blood count? Do I have anaemia?**
- ⇒ **If so, how can it be improved by ways other than blood transfusion?**
- ⇒ **Are there any medications I should stop to minimise my bleeding risk, or start taking to optimise my blood counts?**
- ⇒ **Is there anything I can change in my diet to improve my blood counts?**
- ⇒ **Is there a possibility that I will need a blood transfusion, and what can be done to reduce this?**
- ⇒ **If you think a transfusion is necessary, can you limit the amount of blood you give to me?**