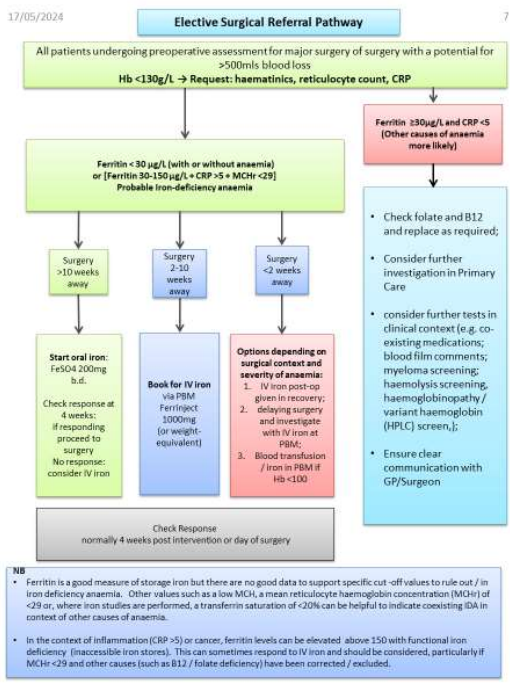
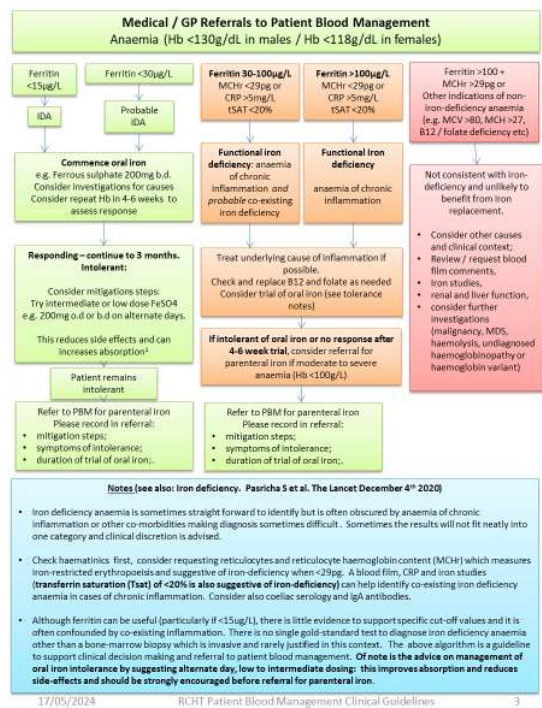
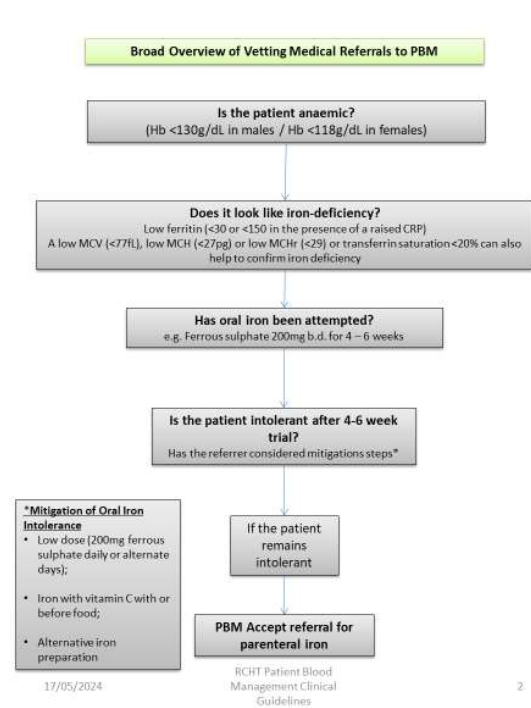


13. Patient Blood Management (PBM)

13.1 REFERRAL PATHWAYS



13.2 NOTES TO PRIMARY CARE

Side effects of oral iron are common. It is therefore important to prescribe in a way that minimises these and avoids the need for referral for parenteral iron which is more invasive and costlier. Clinicians are advised to consider the following measures to optimise tolerance of oral iron:

- intermediate or low dose ferrous sulphate e.g. 200mg o.d: this is proven to reduce side effects and increases absorption.
- we also recommend iron is taken 30 minutes before a meal.
- Advice to the patient on dietary improvement to optimise dietary iron intake.
- An alternative preparation such as ferrous gluconate or ferrous fumarate should be tried before abandoning oral iron.

NB: There is no benefit to enteric coated or modified release iron capsules.

Some clinicians recommend giving oral iron with a source of ascorbic acid (vitamin C), either by taking it with orange juice or with a 500mg ascorbic acid tablet. This is based on the hypothesis that ascorbic acid may increase iron absorption. However, some recently published studies show no major impact of lowering the pH on iron absorption and we are not aware of any high-quality data to support this practice.

Therefore, we cannot make a strong recommendation on the addition of vitamin C to improve oral iron absorption. If oral iron is ineffective in improving Hb, then referral to PBM remains appropriate.

13.3 IRON DEFICIENCY IN THE ABSENCE OF ANAEMIA

The primary purpose of the Patient Blood Management Service is the management of patients suffering from anaemia with iron deficiency (IDA) in order to reduce patient exposure to blood transfusions and preserve blood stocks.

Whilst it is recognised that symptomatic iron deficiency in the absence of anaemia can benefit from replacement, it is strongly encouraged that every attempt is made to replace iron stores orally and address the cause in these circumstances.

The management of oral iron intolerance can be addressed by using oral iron on alternate days at a low (200mg FeSO₄) or intermediate dose – this improves absorption and reduces side-effects and should be tried before referral for parenteral iron.

Where capacity exists, cases of non-anaemic iron deficiency may be considered on a case-by-case basis by PBM, particularly where evidence for replacement is strongest; there is an established regular requirement for replacement (typically patients with inflammatory bowel disease or persistent menorrhagia pending intervention) and capacity within PBM exists.

Where PBM capacity does not allow for this, referrers are encouraged to use alternative facilities for infusional iron, where iron infusions can be safely administered.

13.4 INFORMATION FOR PATIENTS

13.4.1 Iron Replacement

Iron deficiency may be caused by:

- Bleeding (for example from menstruation or in the bowel)
- Diet which is poor in iron
- Pregnancy
- Malabsorption (a bowel abnormality preventing iron being absorbed)

Increasing the amount of iron in your diet will help.

Iron rich foods include:

- Meat, fish and shellfish
- Eggs
- Green vegetables (for example broccoli, spinach, kale, peas)
- Beans and lentils
- Nuts and seeds
- Brown rice and other wholegrains
- Breakfast cereals with added iron ('fortified')
-

13.4.2 Iron tablets

If your doctor prescribes iron tablets they should be taken as follows:

One iron tablet taken half an hour before a meal. If this does not cause too many side effects it can be increased to twice per day, if your doctor advises.

Iron tablets can cause a feeling of sickness (nausea), bloating and discomfort in the abdomen (tummy), and either constipation or diarrhoea. They will make your bowel motions (poo) look dark or black.

Taking the tablets as described above should keep side effects to a minimum.

There are several other ways in which the side-effects can be overcome:

- Taking your iron tablet once or twice a day every other day: this is proven to reduce side effects and increases absorption.
- We also recommend iron is taken 30 minutes before a meal.
- An alternative preparation such as ferrous gluconate or ferrous fumarate can also be tried.

NB: There is no benefit to enteric coated or modified release iron capsules.

Some clinicians recommend giving oral iron with a source of ascorbic acid (vitamin C), either by taking it with orange juice or with a 500mg ascorbic acid tablet.

This is based on the hypothesis that ascorbic acid may increase iron absorption. However recently published studies show no major impact of vitamin C on absorption of iron. Therefore, we cannot make a strong recommendation on the addition of vitamin C to improve oral iron absorption.

Iron tablets should be taken for at least 1 month. If your body iron stores are low then a 3-month course is required.

13.4.3 References

1. Stoffel NU et al. Iron absorption from oral iron supplements given on consecutive versus alternate days and as single morning doses versus twice daily split dosing in iron depleted women: two open label randomised controlled trials. *Lancet Haematol.* 2017; 4:e524-33
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