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Management of Iron Deficiency Anaemia in Obstetrics (including IV Iron)

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Target Audience:

People who need to know about this document in detail	All obstetric, midwifery staff and pharmacy staff including locum and agency staff working in CTM UHB
People who need to have a broad understanding of this document	All obstetric, midwifery staff and pharmacy staff including locum and agency staff working in CTM UHB
People who need to know that this document exists	All staff working within obstetrics.

Integrated Impact Assessment:

Equality Impact Assessment Date & Outcome	**Date: September 2025**
	Outcome: no negative impact
Welsh Language Standard	Choose an item.
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Aligns to the following Wellbeing of Future Generation Act Objective	Choose an item.

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Contents

INTRODUCTION

1. SCOPE OF POLICY

To provide support for clinical decision making for healthcare professionals looking after pregnant women in detecting and treating iron deficiency during the antenatal period to prevent the development of iron deficiency anaemia during pregnancy and in postnatal period.

2. AIMS AND OBJECTIVES

Iron deficiency is the leading cause of anaemia during pregnancy and is a preventable condition. It is well-established that iron stores naturally decline during pregnancy due to physiological changes and the increased demands of the growing foetus. Pregnancy results in a 2-3-fold increase in the body's iron requirements. The dietary intake of iron alone is often insufficient to meet this demand, leading to a marked decrease in iron levels during pregnancy. This deficiency leads to iron deficiency anaemia (IDA), a condition where red blood cell production is impaired and maternal haemoglobin levels drop.

This guidance gives information on:

- The appropriate frequency of tests to screen for anaemia, and
- Advice on the management of anaemia identified in the antenatal and postnatal period.

3. RESPONSIBILITIES

This guideline applies to all members of staff including midwives, obstetric medical staff and nursing staff on the early pregnancy assessment unit and gynaecology ward.

4. CLINICAL FEATURES

IDA can have serious consequences for both mother and baby. While it may be asymptomatic and only discovered during routine screening, common maternal symptoms include fatigue, shortness of breath on exertion, dizziness, fainting, irritability, difficulty concentrating, lethargy, frequent infections, and reduced work capacity.

Pregnant women with anaemia face a higher risk of intrauterine growth restriction (IUGR) and stillbirth. Additionally, IDA can increase the likelihood of postpartum depression and breastfeeding difficulties, as well as raise the risk of postpartum haemorrhage and the need for blood transfusions.

In some cases, signs of iron deficiency anaemia may be present even without a low haemoglobin level. In such instances, diagnosis is confirmed through a full blood count, which will show reduced Mean Cell Volume (MCV) and Mean Corpuscular Haemoglobin (MCH).

It's important to consider other causes of anaemia, such as B12 and folate deficiency, the presence of a variant haemoglobin or thalassaemia, inflammatory disorders, haemolysis and blood loss (with iron deficiency being the most common cause).

5. SCREENING

All antenatal patients must have a **Full Blood Count (FBC) taken during their booking appointment and at 28 weeks.** Women with **multiple pregnancies should have an additional FBC done at 20–24 weeks**.

The **clinic midwife will review the FBC results**;

- For any woman with a booking haemoglobin (Hb) level below 100g/L, the clinic midwife will take appropriate action. For others, Hb levels will be recorded and reviewed at 16 weeks by the community midwife or clinic doctor, whichever is seen first.
- Phone the woman with the 28-week FBC result and document the result in her hand-held notes at 31 weeks when seen by the community midwife.

Iron supplementation should be provided according to the established pathway.

Women should receive enough iron to last until 28 weeks, which typically means 84 tablets (3 X 28 tablets) for those taking one tablet per day. An information leaflet on how to take iron and potential side effects should be given to all women.

Women who are **late booker**, both FBC and Ferritin levels should be assessed.

Women who **decline blood products**, their target Hb is 130g/dL.

- Refer to *Care of Women declining Blood Transfusion guidance*, available via: https://wisdom.nhs.wales/health-board-guidelines/cwm-taf-maternity-file/management-for-care-of-women-who-decline-blood-transfusion/

Women scheduled for an **elective caesarean birth** (CB), review the Full Blood Count (FBC) result from 28 weeks. If the haemoglobin (Hb) level is below 105 g/L, repeat FBC at the time of booking the CB.

After birth, women with blood loss >500 mL, those with uncorrected anaemia detected antenatally or those with symptoms suggestive of anaemia postnatally should have their Hb checked within 48 hours of birth.

6. DIAGNOSIS

NICE Definition of Anaemia in Pregnancy

Hb ≤110g/L in the first trimester
Hb ≤105g/L in second and third trimester
Ferritin ≤30mcg/L

Definition of Postnatal Anaemia

Hb < 100 g/l at 24 hours post-delivery.

Lab tests:

- **FBC** may show low Hb, mean cell volume (MCV), mean cell haemoglobin (MCH) which may suggest microcytic, hypochromic anaemia. For milder cases of iron deficiency, the MCV may not have fallen below the normal range.

- **Serum Ferritin** is the most useful parameter for assessing iron deficiency. It is the best single indicator of storage iron and is the first laboratory test to become abnormal as iron stores decrease and it is not affected by recent iron ingestion. Although it is an acute phase reactant and levels will rise when there is active infection or inflammation.

  A Ferritin level below 30 ug/l in pregnancy is indicative of iron deficiency and should prompt treatment.

  N.B. **Ferritin is not needed post-partum** as Ferritin is an acute-phase reactant and therefore an unreliable marker of iron stores in postpartum period.

- Serum Ferritin should be routinely checked first with patients with haemoglobinopathy i.e. an inherited disorder involving an abnormality in the structure of haemoglobin.

- Serum ferritin should also be checked in women at risk of iron deficiency (e.g. those following a vegetarian, vegan diet).

- Women with a **normal Hb but a low MCV should have their ferritin checked** and if ferritin is less than 30 ug/L, oral iron should be commenced.

7.0 BIRTH PLANNING AND PLACE OF BIRTH

The All Wales Midwifery-Led Care Guideline (6th Edition) **should be used to support recommended pathways of care for women**, both for antenatal care and birth planning and place of birth;

- Using ***All Wales Antenatal Care Criteria*** **of the All Wales Midwifery-Led Care Guidelines appendix 1, P 48-49** wisdom.nhs.wales/health-board-guidelines/guidelines-by-health-board/cwm-taf-morgannwg/cwm-taf-morgannwg-maternity/all-wales-midwifery-led-care-guideline-2022pdf/ P 48 - (assessment at booking and ongoing during pregnancy);

    - Women with Hb<110g/l at booking **or** <105g/l at 28 weeks require iron therapy and 4 weekly FBC in the community (*Pathway C* Midwifery-led antenatal care (MLC)).

      If not responsive to iron therapy or if Hb <90g/l at any time, or any concerns refer to obstetric-led care (OLC) (*Pathway A*).

    - Women with Hb <110g/l at booking or <105g/l at 28 weeks **with no response to oral iron therapy after 4 weeks**, or Hb <90g/l in isolation should be recommended *Pathway A* - additional Care needs requiring OLC.

- Using ***All Wales Place of Birth Assessment Criteria*** **of the All Wales Midwifery-Led Care Guidelines appendix 2, P 53 -** wisdom.nhs.wales/health-board-guidelines/guidelines-by-health-board/cwm-taf-morgannwg/cwm-taf-morgannwg-maternity/all-wales-midwifery-led-care-guideline-2022pdf/

- Place of birth assessment at around 36 weeks, to be completed by the lead carer giver, and at each antenatal contact after this time including at each labour assessment.

    - Women with Hb 85-105g/l and asymptomatic of anaemia should be recommended follow *Pathway B- Individual assessment and intrapartum care planning.*

      Considerations for individualised planning should include:
        - Consideration of prophylactic IV access during labour (women understanding this will not be offered on a midwife-led pathway/in a midwife led or home setting).
        - Whether the woman is suitable for electronic issue blood
        - Recommending active management of third stage (in all birth settings)
        - Whether blood loss triggers require amending with low BMI/maternal weight.

    - Women with Hb <85g/l should be recommended to follow *Pathway A- Additional care needs requiring OLC.*

Considerations for individualised planning should include:

- Women with Hb <85g/l planning birth in a midwife-led setting/home will be choosing care outside of recommended guidance.
- Recommending prophylactic IV access during labour (women understanding this will not be offered on a midwife-led pathway/in a midwife led or home setting).
- Whether the woman is suitable for electronic issue blood
- Recommending active management of third stage (in all birth settings)
- Whether blood loss triggers require amending with low BMI/maternal weight.

8. TREATMENT

8.1 Dietary Advice

- (APPENDIX 7: Anaemia in Pregnancy Leaflet and Dietary Advice)

- All women should be counselled regarding diet in pregnancy including detail of iron rich foods sources and factors that might inhibit or promote iron absorption. Foods rich in iron include red meat, fish and poultry.
- Factors Influencing the Absorption of Iron:

Factors **inhibit** iron absorption	Factors **enhance** iron absorption
Foods rich in calcium	Haem iron
Tannins in tea and coffee	Ferrous iron
Phytates in cereals	Ascorbic Acid

8.2 Oral Iron:

- Oral iron at a minimum effective dose is preferable in the first instance to increment iron stores, given sufficient time to be effective and is preferred up to 28 weeks' gestation. IV iron is preferable where there is limited time to increment iron stores, or where oral iron is either contraindicated or it is not tolerated by the patient, despite correct adherence to the appropriate dose and instructions for administration.
- Ferrous iron salts are the preparation of choice e.g. ferrous sulphate, ferrous fumarate and ferrous gluconate.
- The Optimal oral dose for iron deficiency anaemia should be **40-80mg of elemental iron daily**.
- The table below details the dose and elemental iron content of the iron preparations available.

Table 1. Dose and elemental iron content per dose unit of currently available preparations.

Preparation	**Strength**	**Elemental iron** per dose	**Daily dose**
Ferrous Sulphate Tablets	200mg	65mg	1 tablet OD
Ferrous Fumarate Tablets	210mg	68mg	1 tablet OD
Ferrous Gluconate Tablets	300mg	35mg	1-2 tablet OD
Ferrous Fumarate Capsules (Galfer®)	305mg	100mg	1 tablet OD
Sodium feredetate oral solution*	190mg/5mls	27.5mg/5mls	10-15mL OD
Sodium feredetate trihydrate oral solution (Sytron®) *	207.5mg/5mls	27.5mg/5mls	10-15mL OD
Ferrous Fumarate syrup (Fersamal®) *	140mg/5ml	45mg/5ml	10-15mL OD

* Tablets are first line, where clinically suitable.

The Cwm Taf Morgannwg Formulary can be accessed here and gives the comprehensive up to date list of products available.

Contraindications to oral iron (*Please see BNF for full list*)

- Known allergy to iron preparations
- Haemoglobinuria, hemosiderosis, haemochromatosis.
- Active peptic ulcer.
- Repeated blood transfusions.

Caution to oral iron (*Please see BNF for full list*)

- Regional enteritis and ulcerative colitis

How to take oral iron:

Oral iron supplementation should be taken on an empty stomach with water or a source of Vitamin C to enhance absorption.

A **repeat haemoglobin** check should be performed 4 weeks after starting treatment to

- evaluate the response,
- ensure compliance, and
- confirm correct administration.

Response to Oral Iron:

If taken *correctly*, oral iron supplements will give a *rise in Hb of 20g/L* every 3 weeks.

All women should be provided with the following Leaflets: -

- Anaemia in Pregnancy Leaflet and Dietary Advice (See Appendix 7)
- How to take Iron tablets and Common side effects Leaflet (See Appendix 8)
-

For all women on oral iron, review the following at antenatal visits:

- Compliance

  For women who cannot take tablets;

  - try an **alternative** preparation, such as a liquid. (Neither SPATONE nor FEROGLOBIN Syrup are recommended for women with IDA).

  For women who suffer with nausea and epigastric discomfort,

  - Preparations with a lower iron content should be tried.
  - Slow release and enteric coated forms should be avoided.

  Alternate day dosing is also recognised to aid compliance and reduce risk of adverse side effects.

- Constipation

  Manage constipation by reviewing how the tablets are being taken. Taking correctly enables iron uptake in the stomach, rather than the large bowel, reducing the likelihood of constipation.

- Dietary advice: To address constipation, increase your intake of high-fibre foods like brown pasta, wholemeal bread, and plenty of water.
- **Laxatives**:

	Medication	Dose
1st line	Lactulose	15mL PO BD
2nd line	Laxido	1-3 sachets daily

8.3 Parenteral Iron

Intravenous (IV) iron is a fast and effective treatment for iron deficiency anaemia (IDA), offering an alternative to oral iron therapy. IV iron can help achieve haemoglobin (Hb) targets more quickly than oral iron and does not cause gastrointestinal side effects. However, certain IV iron formulations have been linked to risks such as severe hypersensitivity reactions (1/100 to 1/1000), anaphylaxis (1/1000 to 1/10,000), and iron extravasation (1/10 to 1/100).

At CTMUHB, Ferric derisomaltose (Monofer) is the preferred IV iron solution (in ≥ 18 years old) due to its safety profile and ability to fully replenish iron stores. IV iron therapy has also been demonstrated to be safe for breastfeeding mothers and their babies.

Please refer to the CTMUHB IV iron guidance for full information, consent documentation, prescription form and patient information leaflets.

Indications for IV Iron Therapy

- IDA
- Antenatal: Ferritin < 30 mcg/L with HB <110g/L before 28 weeks or <105 in third trimester or < 100g/L at 24 hours post-delivery with contraindication to or no improvement with PO iron therapy, or Hb <80 g/L in 24 hours post-delivery.
- Failure of PO iron therapy (Malabsorption syndromes, Poor compliance, Significant side-effects).
- Clinical scenarios when there is requirement to increase Hb rapidly (e.g. IDA with placenta accreta).
- Women who decline blood products with Hb < 130g/dl.
- Also consider in women presenting after 34 weeks' gestation with Hb < 100g/l and confirmed iron deficiency.
- Blood transfusion should be avoided in women with Hb >70g/l, consider parenteral iron.

Contraindications to IV Iron Therapy (for full information please refer to BNF)

- 1st trimester of pregnancy
- Age < 18 years
- Previous allergy to IV iron
- Non-IDA (Sickle cell disease/ thalassaemia)
- Iron overload states (e.g. haemochromatosis)
- Decompensated liver failure
- Ongoing bacteraemia

Cautions with IV Iron Therapy (for full information please refer to BNF)

- History of Anaphylaxis (any trigger)
- History of atopy (asthma, eczema, any allergy)
- Known autoimmune/ inflammatory conditions (Systemic lupus erythematosus, inflammatory bowel disease, rheumatoid arthritis)
- Evidence of current infection
- Compensated chronic liver disease

Prescription of IV Iron

- The decision to implement IV iron is to be made by the responsible Obstetric Consultant or Obstetric pharmacist.
- booking women in labour ward/day assessment unit
- An IV iron patient information leaflet should be offered to the patient.
- At minimum, verbal consent is to be taken by the prescriber. This consent should be documented fully in the medical notes.
- A pre –infusion Dawes Redman CTG will be performed in antenatal women.
- The patient is to have a follow up clinic appointment arranged within 4 weeks post IV iron infusion to check Hb.

Before prescribing, all patient should be counselled about the potential side effects of IV iron, including;

- **Fishbane Reaction**
  Facial flushing, chest tightness, shortness of breath and/or joint pains. This is not an anaphylactic reaction; Stop Infusion and Start at a lower rate.
- **Allergy**
  Mild reaction like itching, redness soreness, palpitations. (1/10-1/100).
- **Anaphylaxis**
  Severe allergic reactions are rare (1/1000-1/10,000). - rash, hives, difficulty breathing, swelling lips tongue throat or body.
- **Staining and Extravasation**
  Leakage of the solution into the tissues has been shown to cause long-term or permanent staining of the skin; close monitoring essential for any of these signs during the treatment.
- **Delayed reaction**
  Some patient experience muscle/joint pains after few days of treatment.
- F**etal bradycardia**
  Rarely fetal bradycardia may occur following administration of IV iron. It is usually transient and a consequence of hypersensitivity reaction in the mother.

Administration of IV Iron (ferric derisomaltose)

Equipment/Personnel

- IV iron is to be administered in the presence of staff trained in recognising and treating hypersensitivity reactions, specifically those seen in IV iron. This is

important as staff and patient anxiety can lead to infusions not being completed or a misclassification of reactions.
- An anaphylaxis box must be readily available
- Patient monitoring must include SpO2, RR, BP cuff, pulse and thermometer and be recorded on a MEWS chart.
- A patient dedicated midwife must be available for the duration of the infusion
- A CTG fulfilling Dawes Redman criteria, (or medical review if criteria not met) and an antenatal check are required for all pregnant women before receiving IV iron therapy.

Preparation

- All allergies are to be documented by the prescriber
- IV iron is to be individually prescribed for each patient based upon their weight on the CAV IV iron prescription sheet
- The maximum dose of ferric derisomaltose IV Iron is 20mg/kg
- Each patient prescription will be individually checked by pharmacist and the ferric derisomaltose solution will then be dispensed to be given to the patient.
- If there is a history of allergies or atopy, consider use of prophylactic chlorphenamine 10mg IV.
- Ensure fetal wellbeing (A CTG fulfilling Dawes Redman criteria, or medical sign off and an antenatal check required for all pregnant women before receiving IV iron therapy).

Infusion

- Establish IV access (this must be a fresh IV cannula).
- Attach patient monitoring
- Establish and record on a MEWS chart baseline physiological parameters (BP, HR, RR, temperature and SpO2) before administration of IV iron
- Commence ferric derisomaltose solution at 25mls/ hour
- Encourage patient to stay relatively still during infusion to minimise risk of extravasation.
- Within first 10 minutes, ensure infusion is running freely and monitor for signs of extravasation of solution
- Monitor for signs of rash, urticaria, itching and shivering.
- If well tolerated, increase after 10 mins to 250 ml/hour.
- Monitor and record on a MEWS chart physiological parameters (RR, BP, Sp02 and HR at 30 and 60 minutes, and at 30 minutes post completion of infusion.
- Counsel the patient for signs of post infusion side effects and ensure an obstetric follow up appointment is made (with FBC check) in 4 weeks' time for all antenatal patients.

Extravasation of the IV solution

- If present stop infusion immediately.
- aspirate the cannula
- elevate the arm and call for review by a doctor
- likely to need cannula removed.
- Delayed reactions may occur. These can include joint pain, muscle pain and fever. The patient is encouraged to report any of these side effects to their midwife.

- Any adverse events are to be reported via Yellow Card Scheme; www.mhra.gov.uk/yellowcard.

8.3.1 Choice of IV iron product and dosing

- For patients **≥18 years of age use ferric derisomaltose** (*Monofer*)
  - Prescription chart available via CTMUHB intranet
  - **Dose** as per CTMUHB prescription chart;

FERRIC DERISOMALTOSE DOSING							
Use actual body weight for **postnatal** patients For **pregnant** patients use booking weight or ideal body weight if BMI > 30 *(Ideal Body Weight = [Height (cm) – 154 x 0.9] + 45)*							
Weight	**<50kg**	**50-59 kg**	**60-69 kg**	**70-79kg**	**80-89kg**	**90-99kg**	**≥100 kg**
Dose	20mg/kg* [calculate]	1g	1.2g	1.4g	1.6g	1.8g	2g

- For patients **<18 years of age use ferric carboxymaltose** (brand name = *Ferinject®*)
  - Prescription chart available via CTMUHB intranet
  - **Dose** as per CTMUHB prescription chart, as per Ferinject 50 mg iron/mL dispersion for injection/infusion. - Summary of Product Characteristics (SmPC) - (emc) | 5910

9. FOLLOW UP

Treatment for iron deficiency anaemia should be initiated promptly by the healthcare professional managing the woman. If the **anaemia is severe (Hb < 70 g/L) or persists beyond 34 weeks, referral to specialist** care is required, as per the BSH Guideline (2019).

A **repeat haemoglobin (Hb) check should be performed two weeks after starting treatment** for iron deficiency anaemia to evaluate the response, ensure compliance, and confirm correct administration.

Once Hb levels return to the normal range, iron supplementation should **continue for 3 months and for at least 6 weeks postpartum** to fully replenish iron stores.

Postnatal Women

Postnatal women with Hb levels below 100 g/L should be offered 40-80 mg of oral elemental iron daily for at least three months, with follow-up FBC and ferritin tests to ensure Hb normalizes, and iron stores are restored.

If the response to oral iron supplementation is inadequate, other potential contributing factors, such as Vitamin B12 or Folate deficiency or Anaemia of chronic disease, should be ruled out. Referral to a consultant is necessary in these cases.

10. EQUALITY IMPACT ASSESSMENT STATEMENT

This policy has been screened for relevance to Equality. No potential negative impact has been identified.

11. REFERENCES

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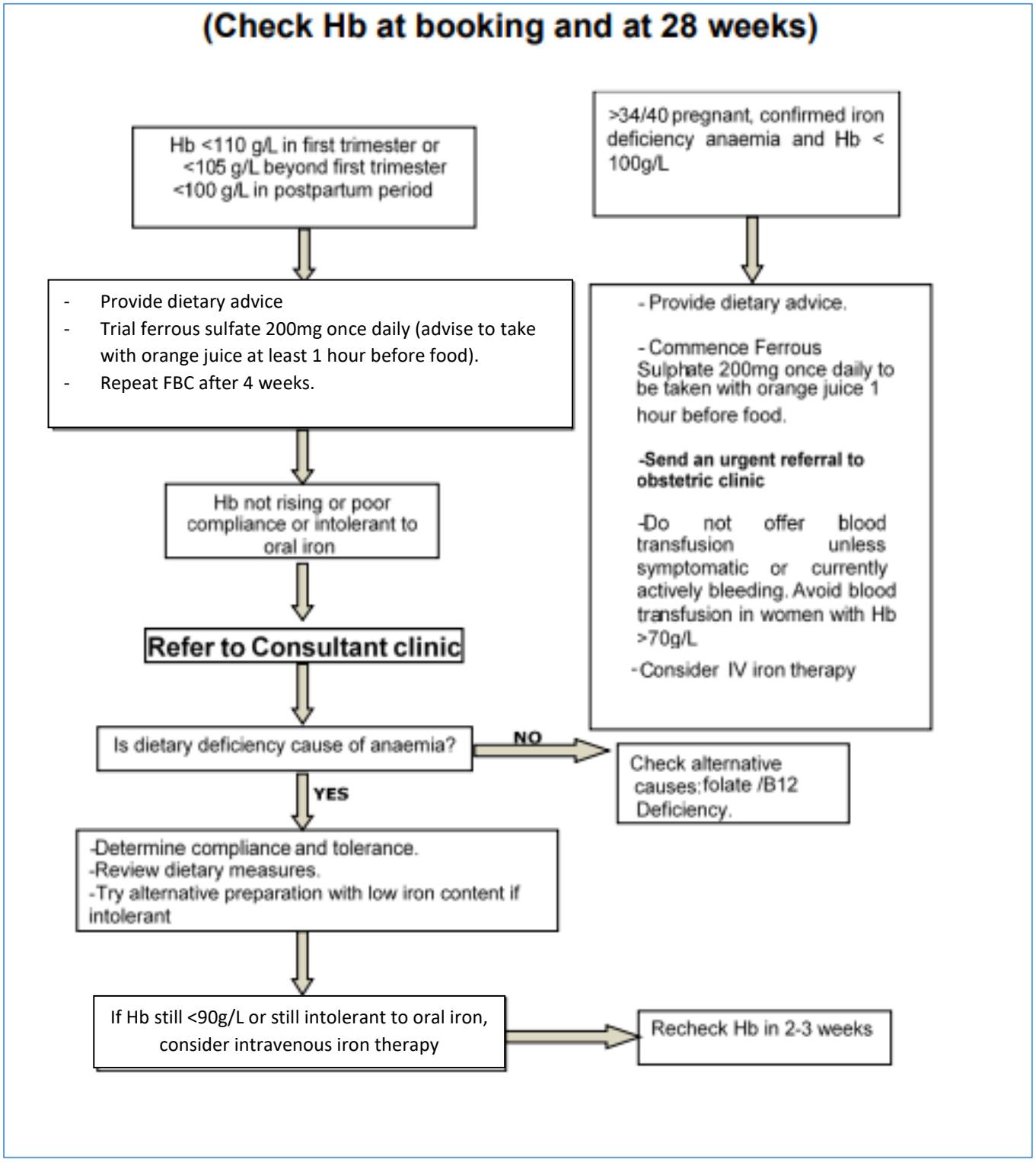
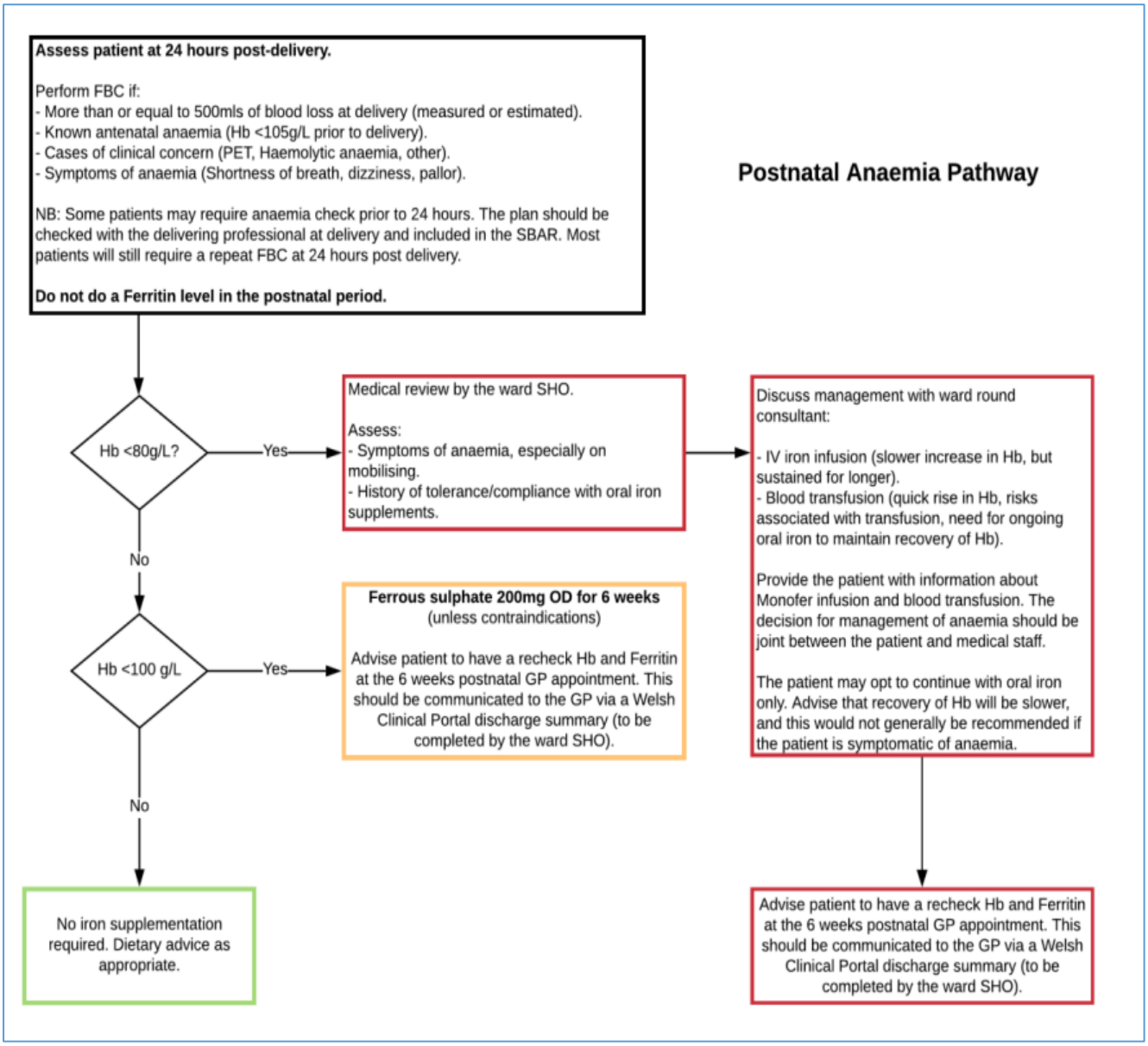
iv) NICE (2025). *BNF.* Available at: https://bnfc.nice.org.uk/ [Accessed 25/03/2025]
v) NICE (2021). *Antenatal Care NG 201.* Available at: https://www.nice.org.uk/guidance/ng201/resources/antenatal-care-pdf-66143709695941 [Accessed: 04/03/2025].
vi) Emc (2023). *Ferric derisomaltose Pharmacosmos 100mg/mL solution for injection/infusion.* Available at: https://www.medicines.org.uk/emc/product/5676/smpc [Accessed 10/03/2025].

APPENDIX 1: Iron Deficiency Anaemia in Pregnancy Flow Chart



APPENDIX 2: Postnatal Anaemia Pathway



APPENDIX 3: BDA Iron Food Fact Sheet

[Available via: https://www.bda.uk.com/resource/iron-rich-foods-iron-deficiency.html]

BDA The Association of UK Dietitians

Food Fact Sheet

Iron

Iron is a mineral that has many different roles in the body. Iron is particularly important for making haemoglobin: a protein contained in red blood cells that transports oxygen around the body. Iron also plays an essential role in maintaining a healthy immune system (your body's natural defence system).

This Food Fact Sheet lists the recommended amounts of iron for different groups of people and the foods and drinks that are rich in iron. It also gives you some ideas on how you might achieve your recommended intake.

What are the symptoms of iron deficiency?

People with mild iron deficiency often feel tired, lacking in energy and tend to be more susceptible to infections. With more severe iron deficiency (called iron deficiency anaemia) symptoms such as heart palpitations, brittle nails, thinning hair, itchy skin (pruritus) and mouth sores or ulcers can develop.

Which foods are good sources of iron?

Many different foods contain iron in different amounts. Some food sources are more iron-rich than others. For example, animal-based sources such as red meat (beef, lamb and pork) are particularly rich sources of iron and are most easily absorbed, and to a lesser extent fish and poultry. *(see Table 2)*

Plant-based sources of iron include pulses and legumes (such as beans, peas, and lentils), dark green leafy vegetables (such as spinach, cabbage, and broccoli), tofu, nuts and seeds.

The iron in animal-based sources is often referred to as 'haem iron' whilst the iron in plant-based sources is often referred to as 'non-haem iron'. 'Haem iron' can increase the absorption of 'non-haem iron'. Therefore, to improve iron status it can be beneficial to eat, for example, red meat (beef, lamb or pork) alongside green leafy vegetables. Many breakfast cereals are also fortified with iron.

Table 1: How much iron do I need?

Group	Age (years)	Iron (mg) per day
Infants	0-3 months	1.7
	4-6 months	4.3
	7-12 months	7.8
Children	1-3 years	6.9
	4-6 years	6.1
	7-10 years	8.7
Adolescents	11-18 years	14.8(girls)
		11.3 (boys)
Adults	19-50 years	8.7 (males)
	19-50 years	14.8 (females)
	50+ years	8.7

www.bda.uk.com/foodfacts

Iron and vegetarianism

Although not as easily absorbed as animal-based sources, plant-based foods such as beans, grains and vegetables also contain iron. Some plant-based foods contain more iron than others and food preparation can enhance iron absorption. For example, cooking, soaking nuts and seeds and using sprouted seeds and grains. Try and opt for the more iron-rich plant-based foods.
(see Table 2 for suggestions).

What about vitamin C?

Although vitamin C has been shown to increase the absorption of iron, it is currently unclear as to whether this improves iron status. Nevertheless, fruits and vegetables rich in vitamin C should be eaten in regularly in the diet.

Tips to ensure an iron-rich diet

- **Add green leafy vegetables to main meals.**
- **Add dried fruit to desserts and have fruit and (or) nuts as snacks between meals.**
- **Try iron fortified products.**

Menu ideas*

Breakfast
Fortified breakfast cereal or wholemeal toast.
Piece of fruit.
Lunch
Wholemeal sandwich with tuna, sliced beef or pork and salad.
or
Sardines or baked beans on wholemeal toast.
or
Salad sprinkled with seeds with a portion of meat, fish or pulses and potatoes
Dinner
Serving of meat, fish, poultry or pulses with vegetables and potatoes
or
Bean curry or chilli served with potatoes and side salad
or
Baked potato (with skin) with baked beans and vegetables
Snacks
Fruit (fresh or dried), handful of nuts

**These menu ideas are just a guide. For tailored dietary advice, seek assistance from a dietitian.*

Table 2: Iron in different foods

Type of Food	Iron per 100g
Animal-based sources	
Beef (Rump steak)	3.6mg
Beef mince (stewed)	2.7mg
Pork chop (grilled)	0.7mg
Lamb leg (roasted)	1.8mg
Chicken (roasted, light meat)	0.7mg
Liver pate	5.9mg
Sausages (pork)	1.1mg
Back Bacon (grilled)	0.6mg
Eggs (fried)	2.2mg
Fish-based Sources	
Cod/Haddock (baked)	0.1mg
Salmon (steamed)	0.4mg
Mackerel (grilled)	0.8mg
Prawns (boiled)	1.1mg
Tuna (canned in brine)	1.0mg
Plant-based sources	
Baked beans (in tomato sauce)	1.4mg
Butter beans (canned)	1.5mg
Chickpeas (boiled)	2mg
Kidney beans (canned)	2mg
Tofu (steamed)	1.2mg
Fruit, nuts and seeds	
Figs (partially dried)	3.9mg
Apricots (partially dried)	3.4mg
Dates (dried)	1.3mg
Almonds	3mg
Brazil nuts	2.5mg
Peanut butter (smooth)	2.1mg
Hazelnuts	3.2mg
Sesame seeds	10.4mg
Sunflower seeds	6.4mg
Vegetables	
Broccoli (boiled)	1mg
Spinach (boiled)	1.6mg

Summary:

Iron is an important mineral we need to have in our daily diet. Opt for a variety of iron-rich foods to ensure an adequate intake of iron.

Further information:
Food Fact Sheets on other topics including Vitamin D are available at **www.bda.uk.com/foodfacts**

APPENDIX 4: Pre IV Iron Infusion Checklist

Action	Comments
Clinical indication *N.B. Need to have a ferritin level before iron can be administered antenatally- ferritin not needed for postnatal patients*	
Alternate methods tried? *e.g. oral iron, compliance checked,*	
Decision for IV iron *N.B. 1st line IV iron = Monofer (ferric derisomaltose) unless patient <18yrs old; use Ferinject (ferric carboxymaltose) in those <18yrs of age.*	
Information leaflet given at initial counselling	
Discuss common **side effects**: Some common side effects (affect up to 1 in 10 people) experienced include: • headache • dizziness • feeling hot (flushing) • nausea (feeling sick) • high blood pressure • Injection site/infusion site reactions	
Advise there is a **risk the infusion may leak from the infusion site into the surrounding skin tissue**; it can cause pain, inflammation and potentially long-lasting brown discolouration of skin at infusion site. Advise patient to inform midwife/ doctor if experience pain/swelling at the infusion site during infusion. If leakage occurs, the infusion must be stopped.	
Rarely (up to 1 in 1,000 people), iron infusion can cause an **allergic reaction**. Monitor for rash (e.g., raised, red, itchy bumps), itching, and difficulty breathing, wheezing and/or swelling of lips, tongue, throat or body. ***Please note: a fishbane reaction is not an anaphylactic reaction; stop infusion and restart at a slower rate*** *(as per CTMUHB IV iron guidance).* Advise patient to tell a nurse or doctor immediately. Also, advise to report any delayed side effects (that occur at home) to the department that administered the iron infusion or the GP.	*N.B. patients with liver disease, asthma, eczema, SLE or Rheumatoid disease are more susceptible to hypersensitivity reactions.*
Is the service user happy to proceed? Confirm patient consent obtained (can be verbal or written, BUT must be well documented).	

Action	Comments
Cannula sited- complete PVC	
Baseline observations (record on MEWS)	
Observations when finished (record on MEWS)	
Inspection of cannula site/any pain or inflammation If pain is reported, inspect line and document, escalate	
Remove Cannula- complete PCV Inspection of site and document	

IV IRON ADMINISTRATION

IV IRON PREPARATION (CIRCLE)	Ferric derisomaltose (Monofer)	Ferric carboxymaltose (Ferinject) *** for patients < 18 years ***

Addressograph	**Date:**	
	Hb:	
	Ferritin:	
	Decision for IV iron made by:	*(Registrar or Consultant)*

Date:		**Weight** (kg) **Booking weight** (kg)		**Allergies:**	
EDD	*Note here if postnatal*			**Oral iron stopped?**	Yes / NA
Fetal movements normal on auscultation	Yes / No / NA		*Select NA if postnatal*		

Initial Observations

Time	:	**BP**	/	**Pulse**	
RR		**Temp**	°C	**O_2 Saturation**	%
Infusion Start Time	:			**Dosage**	mg
				Batch Number(s)	
Peripheral IV cannula care bundle complete?					*Tick*
Inform medical team infusion commencing					*Tick*

Observe for signs of reaction and check cannula for signs of perivenous leakage during initial 3-5mins. Follow reaction management algorithm in case of reaction

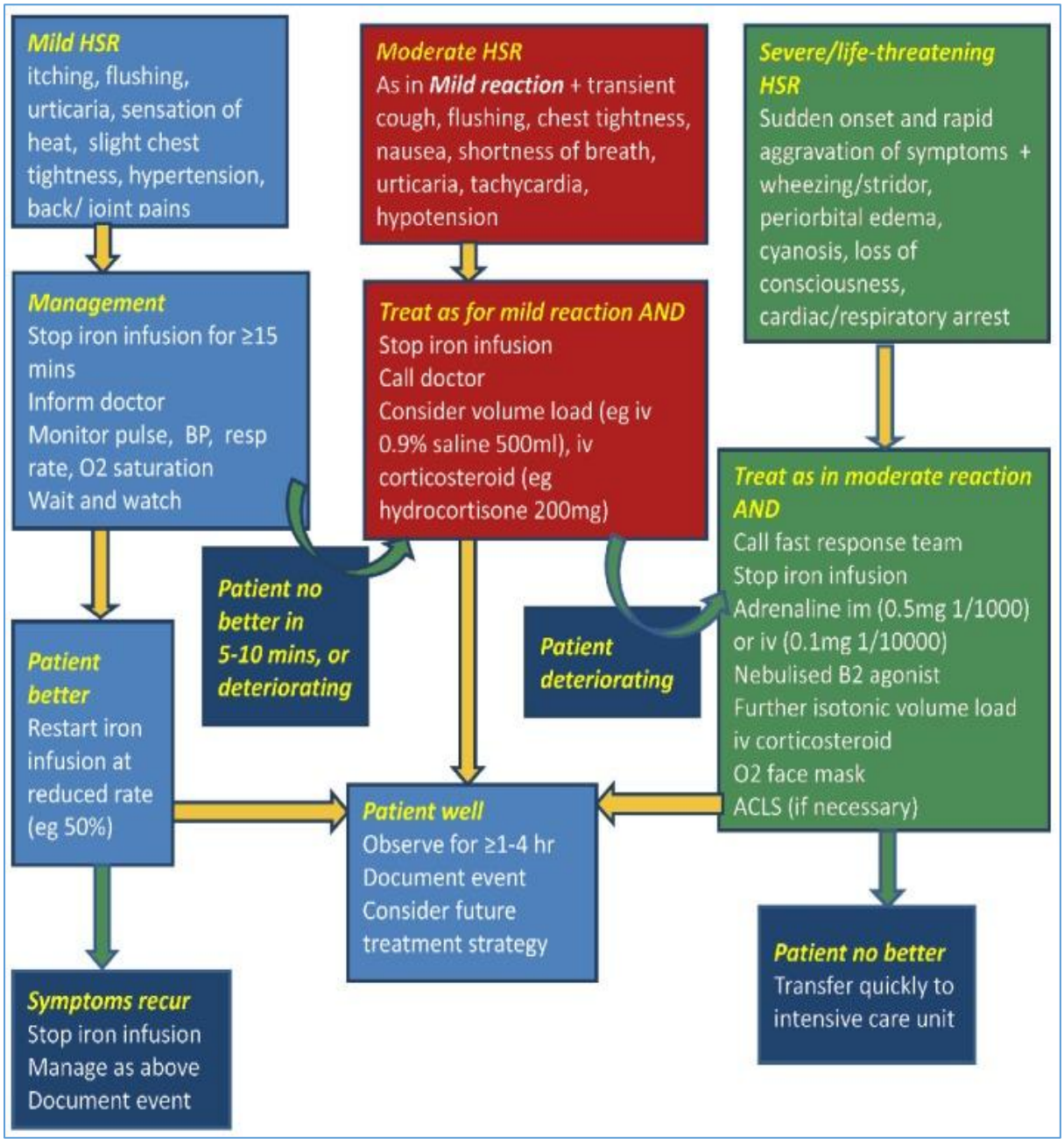
Observations after infusion

POST INFUSION	**Time**	:	**BP**	/	**Pulse**	
30 mins post infusion	**Time**	:	**BP**	/	**Pulse**	
60 mins post infusion	**Time**	:	**BP**	/	**Pulse**	

Follow up plan

Health care professional signature	**Name** **Role**	**Date**	

APPENDIX 5: Management of Hypersensitivity Reactions to IV Iron



APPENDIX 6: IV Iron Patient Information Leaflet

Why do I need to have IV iron?

Your doctor will have chosen intravenous (IV) iron because you need to correct the iron levels in your body. IV iron is used for treating iron deficiency anaemia when oral iron preparations are ineffective or cannot be used or when there is a need to deliver iron rapidly.

How is IV iron administered?

IV iron is an intravenous iron treatment that is given directly into a vein. The infusion will run into your vein from a drip, and you will be monitored by a midwife throughout the procedure. The procedure should take 60-90 minutes. Is it safe for me? Iv iron is considered to be a safe drug, however there are known side-effects. Your obstetrician or obstetric pharmacist will discuss these with you when deciding to treat you with IV iron.

What are the common side-effects?

The most common side-effect at the time of infusion is nausea. Your midwife will monitor you during your infusion for signs of reactions at the injection site – these include redness, soreness or discolouration (1/10-1/100). Extravasation (leakage of the solution into the tissues) has been shown to cause long-term staining of the skin; therefore, you will be monitored very closely for any of these signs during the treatment. If you notice any pain or redness around the drip, please let your midwife know immediately. Rare side-effects (1/100-1/1000) include fast heart rate, low blood pressure, rash and joint pains. Severe allergic reactions, such as anaphylaxis, are rare (1/1000-1/10,000).

Is it safe for my baby?

IV iron is not licensed for administration within the first trimester. Your obstetrician or pharmacist will discuss the risks and benefits of undergoing IV iron therapy for you and your baby.

Can I take my medication whilst having IV Iron treatment?

Please continue to take your regular medication. We advise you stop taking your oral iron whilst having IV Iron. Have been shown to be safe with minimal transfer of iron into the breastmilk.

Can I breastfeed my baby?

If you are found to be anaemic after the delivery of your baby, having an IV iron infusion could be a treatment option. For mothers who have decided to breastfeed their babies, therapeutic doses of IV Iron have been shown to be safe with minimal transfer of iron into the breastmilk.

What if I'm unwell during or after my treatment?

IV iron will be administered in a hospital setting, with trained staff present to look out for any side effects. IV iron can cause flu-like symptoms. If this occurs, we will ask you to call your midwife for advice.

What happens after my treatment?

After your infusion of IV Iron, a follow-up appointment will be made for you for bloods. This would typically be within 4 weeks of your treatment. Your blood haemoglobin level will also be re-checked at this time.

APPENDIX 7: Anaemia in Pregnancy Leaflet and Dietary Advice

Anaemia and pregnancy

Anaemia can be common in pregnancy. Anaemia is a blood condition that develops when you don't have enough red blood cells. Red blood cells contain haemoglobin, a protein that carries oxygen around your body and to your baby.

Signs and symptoms of anaemia in pregnancy

Symptoms of anaemia can include:

- tiredness and lack of energy
- shortness of breath
- feelings of having a fast beating, fluttering or pounding heart (heart palpitations)
- pale skin.

There are different types of anaemia and each has a different cause. The most common type for pregnant women is iron-deficiency anaemia.

What causes iron deficiency anaemia?

Pregnancy is often the cause of iron-deficiency anaemia. You and your baby need a lot more iron to make red blood cells while you're pregnant. Iron-deficiency anaemia can happen when you are not eating enough food with iron.

You are also more likely to have anaemia if you:

- are a vegetarian or vegan
- have had anaemia before
- have a history of heavy periods
- are carrying more than one baby
- were younger than 20 when you got pregnant
- you are pregnant again after having a baby within the last year.

Will I be checked for anaemia during my pregnancy?

Yes. You should have a blood test to check for any conditions that may affect your baby, including anaemia at your booking appointment and when you are 28 weeks pregnant.

If you're carrying more than one baby, you should have an extra blood test at 20-24 weeks.

This will give you enough time to get treatment if you need it.

You can call your midwife at any time if you think you have anaemia symptoms and you can be tested for anaemia at any point in your pregnancy. You don't have to wait for your antenatal appointments or for routine tests

Will iron deficiency anaemia harm me or the baby?

Most people with anaemia in pregnancy go on to have a healthy pregnancy and baby. However, anaemia has

and after birth if it isn't treated. These can include:

- premature birth
- low birthweight
- placental abruption
- your body being less able to cope with blood loss during labour
- iron deficiency in your baby in their first 3 months of life
- problems with the baby's mental development.

It can be difficult to read these but try not to worry too much as the risk is low. If you are diagnosed with anaemia and it is treated properly it is very likely you will still have a healthy pregnancy and baby.

How is iron deficiency anaemia treated?

If you have anaemia, you'll be prescribed iron supplements (tablets) or as a liquid to take every day. See below on how to take them.

Your symptoms should get better after taking iron supplements. If it doesn't, or if your anaemia is severe, you'll probably be referred to a haematologist (a doctor expert in blood disorders).

You may be given iron through intravenous therapy (IV). This means giving you iron in liquid form through a needle directly into the vein (usually in your arm). You may also be offered a blood transfusion.

Best foods to treat iron insufficiency

Most people should be able to get all the iron they need by eating a healthy, balanced diet. Eating well will help you either prevent anaemia or manage your symptoms if you have it.

Some food has more iron than others. For example, animal-based foods are particularly rich in iron and are most easily absorbed.

Iron-rich food list

Most people should be able to get all the iron they need by eating a healthy, balanced diet. Eating well will help you either prevent anaemia or manage your symptoms if you have it.

APPENDIX 8: How to Take Iron Tablets and Common Side Effects Leaflet

Iron Supplements:-

How do I take them?

You should take your iron supplement on an empty stomach preferably one hour before a meal, with a drink containing vitamin C such as a glass of orange juice.

Why is the way I take them important?

Absorption of iron from the gut is reduced by food, tea and milk so these should be avoided for one hour before and after taking the iron supplement.

Taking iron properly on an empty stomach (with vitamin C), increases absorption and reduces side effects such as constipation as the iron gets absorbed in the stomach, rather than passing through to the large bowel.

Some medications also affect absorption of iron from the gut, particularly medications which reduce stomach acid (antacids)and certain antibiotics. Always check with your doctor or pharmacist whether any of your medications might affect how your iron supplements work.

The only factor that improves the absorption of iron is vitamin C. We recommend that you take your supplement with a drink containing vitamin C.

What side effects might I get?

The following side effects are common:

nausea (feeling sick), tummy pain, diarrhoea and constipation

These usually improve as your body gets used to the iron supplements. If needed you can reduce the dose to one a day and/or request a lower strength supplement. If this is better for you, try to then increase back to the original dose. Contact the health professional that prescribed the iron tablets if you have any concerns.

You will be asked to have a repeat blood test after the start of your iron supplements to check that the iron levels are increasing.

I am constipated

What can I do?

Are you taking tablets correctly?

Taking correctly enables iron uptake in the stomach, rather than the large bowel, reducing the likelihood of constipation.

Dietary advice:

Several foods reduce the chance of constipation, such as eating brown bread, rice or pasta rather than white versions.

Ensuring adequate water intake of around 2000mls (2 litres a day).

If you are still constipated – please discuss with your midwife, GP or Obstetrician about some simple treatments.