



Clinical Practice Guideline Peninsula Care Goal

Iron Deficiency and Anaemia in Pregnancy Safe

Target Audience

Registered Nurse/Enrolled Nurse
Registered Midwife
Medical Officer

Purpose

To provide a guideline for staff in the assessment, prevention and treatment of iron deficiency and iron deficiency anaemia (IDA) throughout pregnancy.

This guidance refers to patients as 'woman', 'mother' or 'maternal'. It is acknowledged that the guideline also applies to people who do not identify as women, but who are pregnant or have given birth.

Guideline

Iron deficiency is the most common cause of anaemia in pregnancy. Many women start pregnancy with depleted iron stores. Iron requirements are 3 times higher in pregnancy, and therefore a deficiency can result in adverse outcomes for the mother and baby. Early recognition and management of iron deficiency can prevent and treat anaemia and may be associated with improvements in other outcomes.

Iron deficiency without anaemia (IDWA) has been associated with symptoms that may resolve with appropriate therapy, and

Pregnancy is associated with physiological haemodilution and therefore a small drop in haemoglobin is normal. Historical normal values were based on non-pregnant populations and therefore may overdiagnose anaemia. Until a consensus is reached by WHO, the British Society for Haematology UK Guidelines (2020) recommend the following thresholds:

Anaemia in Pregnancy:

First Trimester	Hb<110 g/L
Second Trimester	Hb<105 g/L
Third Trimester	Hb<105 g/L (Australian Red Cross guidelines use 110g/L)
Postpartum	Hb<100 g/L

Risk factors for iron deficiency anaemia

- Vegetarian diet (also a risk factor for B12 deficiency, a cause of non-iron deficient anaemia)
- Previous episode of anaemia
- Multiple pregnancy
- Inter-pregnancy interval <1 year
- Teenage pregnancy
- Recent history of bleeding
- Inflammatory bowel disease - decreased absorption
- Bowel surgery resulting in resection or diversion of upper GI bowel (eg sleeve gastrectomy, Roux-en-Y)
- Multiparity ≥3 births
- Aboriginal and Torres Strait Islander Women.

PROMPT doc no: 121883 Version: 4.0		
First created: 19/09/2017	Page 1 of 11	Last reviewed: 16/07/2022
Version changed: 16/07/2022	UNCONTROLLED WHEN DOWNLOADED	Next review: 16/07/2025



Clinical Practice Guideline Peninsula Care Goal

Iron Deficiency and Anaemia in Pregnancy Safe

Clinical Effects of Iron Deficiency

Maternal

- Anaemia
- Fatigue, post-partum depression, impaired quality of life (even with IDWA)
- Impaired thyroid function (low TSH and T3)
- Postpartum haemorrhage (blood loss greater if Hb<85g/L) due to impaired myometrial contractility
- Maternal mortality (twofold increase if Hb <70g/L) esp. middle and low income countries

Fetal / Neonatal

- Anaemia associated with increased perinatal mortality, stillbirth, low birth weight, preterm birth (low in middle income countries and women from those countries), although iron supplements make minimal differences, suggesting multifactorial aetiologies.
- Low fetal and neonatal ferritin
- Iron is essential for neurodevelopment, and animal studies show impaired neurodevelopment with iron deficiency, but studies monitoring outcomes are inconsistent.

Screening and Treatment

- Screening for risk factors for anaemia should take place at the booking visit and the medical review.
- A full blood count and ferritin should be offered to all women with their booking blood tests, and with the glucose tolerance test at 26-28/40.
- At each visit the clinician should review the results of recent blood tests, monitor the response to any treatment, discuss and document a management plan in BOS (and the Victorian Maternity Record for women having shared care)

The Australian Red Cross Blood service has developed guidelines to assist clinicians in the decision-making process. They are included in the flowcharts in the appendix below. Interactive guidelines can also be obtained from the iTransfuse mobile device app, available from the Apple App Store and Google Play.

- [First trimester](#) [appendix 1](#)
- [Second trimester](#) [appendix 2](#)
- [Third trimester](#) [appendix 3](#)
- [Intrapartum](#) [appendix 4](#)
- [Postpartum](#) [appendix 5](#)
- [Oral Iron Choices for Maternity – consumer information – appendix 6](#)

Iron Infusion

Whilst oral iron supplements should be the default recommendation for prevention and treatment of iron deficiency, women receiving IV iron were more likely to achieve their target Hb and have fewer side effects. [Iron Polymaltose](#) and ferric carboxymaltose are available. If iron replacement is required on the day of discharge or in an outpatient setting, ferric carboxymaltose (limited to 1g within 7 days) over 15 minutes is more convenient and available through a PBS prescription. Iron polymaltose for doses up to and including 1.5g can be administered over 15 minutes but require preparation notice through the Pharmacy Department.

PROMPT doc no: 121883 Version: 4.0		
First created: 19/09/2017	Page 2 of 11	Last reviewed: 16/07/2022
Version changed: 16/07/2022	UNCONTROLLED WHEN DOWNLOADED	Next review: 16/07/2025



Clinical Practice Guideline Iron Deficiency and Anaemia in Pregnancy Peninsula Care Goal Safe

Indications for IV iron:

- Non-compliance or intolerance of oral iron
- Unable to absorb oral iron (e.g. following resective bowel surgery)
- Failure to respond to oral iron with ongoing symptoms or anaemia
- Where rapid response is required (e.g. anaemia in the late third trimester)
- Following postpartum haemorrhage

Contraindications:

- History of anaphylaxis or severe adverse reaction to iron infusion

Iron Deficiency Without Anaemia

The Australian Red Cross Guidelines below should be considered the minimum standard to prevent and treat iron deficiency anaemia. Studies have shown that women with fatigue and IDWA may respond to iron supplement therapy.

Women with iron deficiency without anaemia should be advised to take oral iron supplements, with a repeat haemoglobin and ferritin level taken 4-8 weeks later to monitor the response. Women with symptoms who are unable to tolerate or do not respond to oral iron may also be suitable for an intravenous iron infusion (See the CPG: [Intravenous Iron Infusion Perinatal](#)).

Key Aligned Documents

- [Alert, Allergy and Adverse Drug Reaction](#)
- [Hand Hygiene and Aseptic Technique](#)
- [Medical Treatment Decisions & Consent Policy](#)
- [Patient Identification & Procedure Matching](#)
- [Medication Management](#)
- [Iron Polymaltose](#)
- [Intravenous Iron Infusion Perinatal](#)
- [Transfusion Practice \(Blood Management\)](#)
- [Medication Management](#)

Evaluation

The effectiveness of this guideline will be monitored and evaluated through the regular revision and review of relevant documentation. Investigation into and education surrounding feedback received through the VHIMS reporting system.

References

1. Pavord S. UK guidelines on the management of iron deficiency in pregnancy. Br J Haematol. 2020;188(6):819. Epub 2019 Oct 2.
2. [Management of Iron Deficiency in Maternity and Gynaecology Patients](#). Royal Women's Clinical Practice Guidelines. July 2020
3. Australian Red Cross Blood Service – iTransfuse mobile device application (accessed via from Apple App Store 01/03/2022)

Keywords

PROMPT doc no: 121883 Version: 4.0		
First created: 19/09/2017	Page 3 of 11	Last reviewed: 16/07/2022
Version changed: 16/07/2022	UNCONTROLLED WHEN DOWNLOADED	Next review: 16/07/2025



Clinical Practice Guideline Iron Deficiency and Anaemia in Pregnancy

Peninsula Care Goal Safe

Anaemia	Low haemoglobin (see other definitions above)
ARCBS	Australian Red Cross Blood Service.
FBC	Full blood count (also known as FBE, full blood examination).
Hb	Haemoglobin (measured in grams per litre (g/L)
IDA	Iron deficiency anaemia - ferritin ≤ 30 mcg/L with anaemia
IDWA	Iron deficiency without anaemia (Ferritin ≤ 30 mcg/L)
MCV	Mean Corpuscular volume/ Mean cell volume
Severe Anaemia	In pregnancy – Hb < 70 g/L

Document management	Position
Executive Sponsor:	Executive Director of Medical Services
Document Owner:	Blood Management Committee
Document Author	Blood Management Clinical Nurse Consultant
Approved by:	Blood Management Committee, Drugs and Therapeutics Committee
Date created/revised in archived system:	26/07/17, 07/2022



Clinical Practice Guideline Peninsula Care Goal

Iron Deficiency and Anaemia in Pregnancy Safe

Appendix 1

Haemoglobin Assessment and Optimisation in Maternity



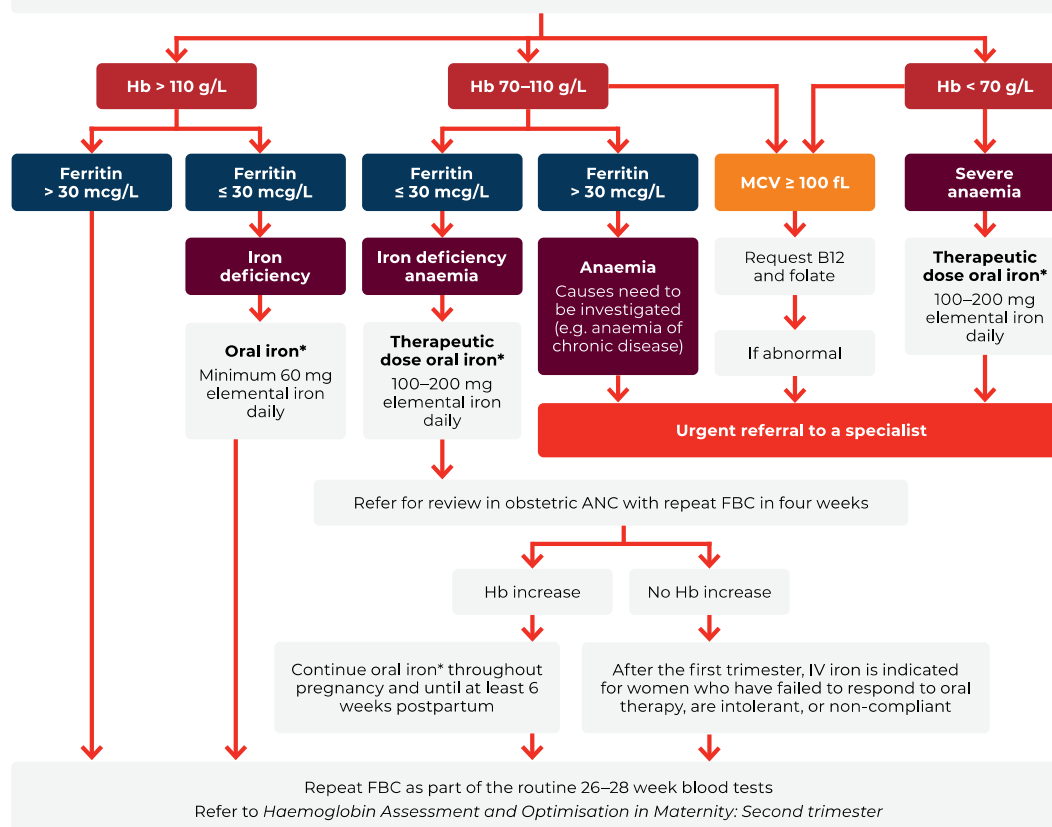
First trimester

First antenatal visit ≤ 20 weeks (booking visit)

- Document risk factors for anaemia: Previous anaemia, inter-pregnancy interval < 1 year, multiple pregnancy, parity ≥ 3, vegetarian/vegan, teenage pregnancy, recent history of bleeding, Aboriginal and Torres Strait Islander.
- **Important:** Request full blood count (FBC) and ferritin on all women if recent bloods not available.
- Perform haemoglobinopathy screening if risk factors (women with a family history of anaemia, thalassaemia or other abnormal haemoglobin variant; and any woman from a high-risk ethnic background who has not previously been tested) or the booking FBC shows a MCV ≤ 80 fL and/or MCH < 27 pg.

Second antenatal visit (follow-up visit)

- If a haemoglobinopathy is detected, perform partner screening as soon as possible. Add the woman's details to the request form and refer her to the obstetric antenatal clinic (ANC).
- Review booking blood results and use the flowchart to determine if iron is required.*



*If iron therapy is required:

- Continue iron rich diet and pregnancy multivitamins.
- Provide the woman with the following handouts: Lifeblood's *Oral Iron Choices for Maternity* and Bloodsafe's *A Guide to Taking Iron Tablets*.
- Document iron preparation and dose in the patient's record.
- Assess adherence (dose and timing) and ask about side effects at every visit. Refer to Bloodsafe's *A Guide to Taking Iron Tablets* to address side effects.





Clinical Practice Guideline Peninsula Care Goal

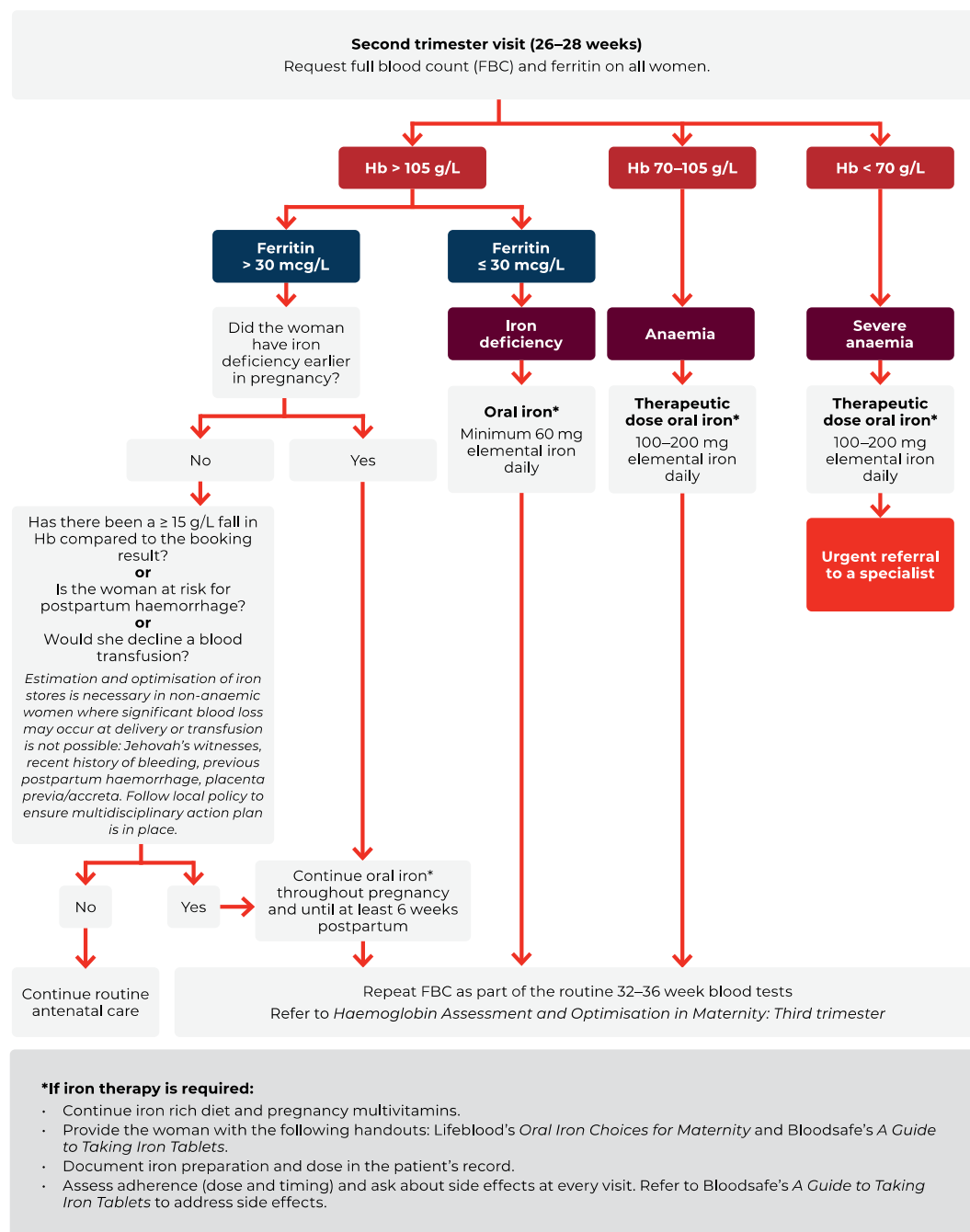
Iron Deficiency and Anaemia in Pregnancy Safe

Appendix 2

Haemoglobin Assessment and Optimisation in Maternity



Second trimester





Clinical Practice Guideline Peninsula Care Goal

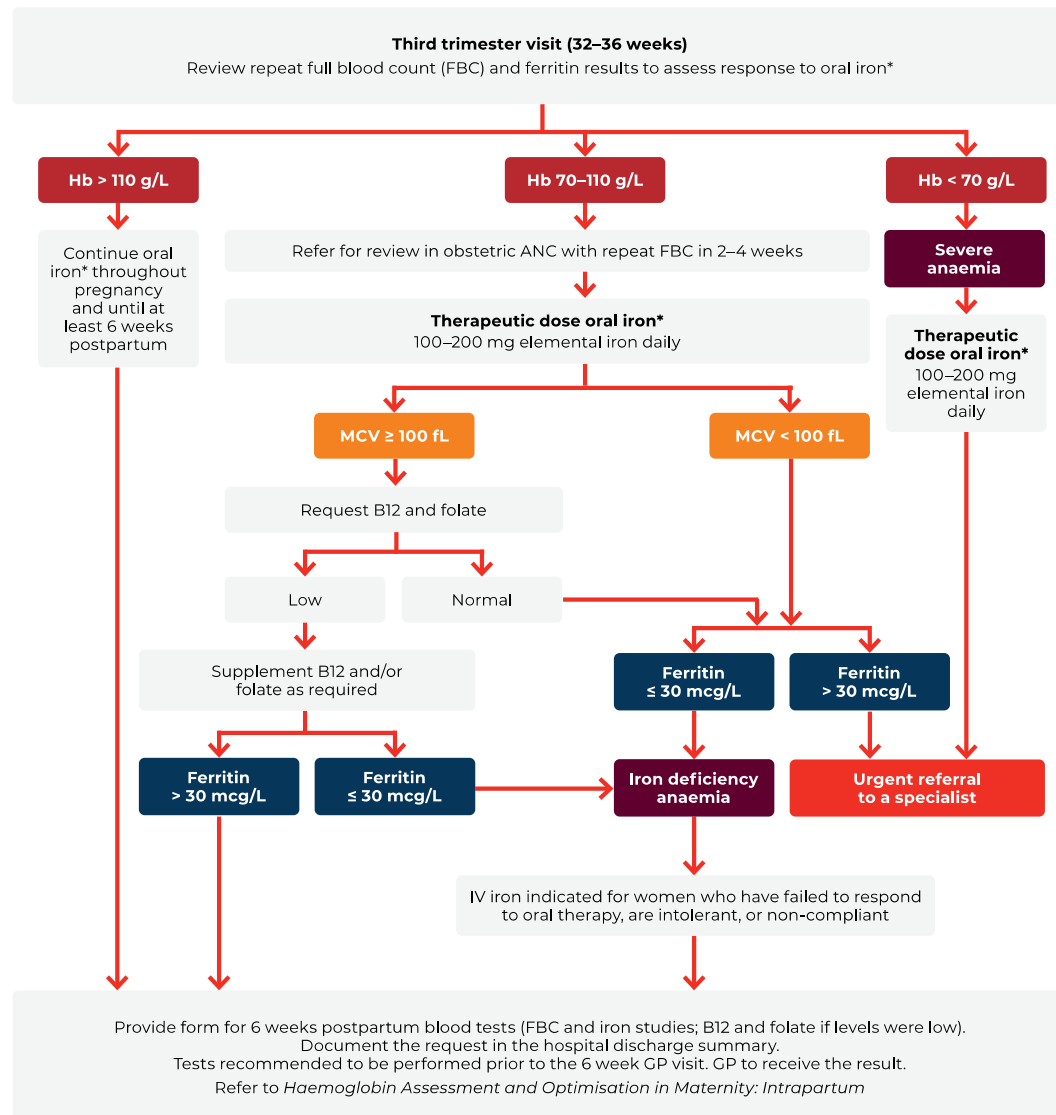
Iron Deficiency and Anaemia in Pregnancy Safe

Appendix 3

Haemoglobin Assessment and Optimisation in Maternity



Third trimester



*If iron therapy is required:

- Continue iron rich diet and pregnancy multivitamins.
- Provide the woman with the following handouts: Lifeblood's *Oral Iron Choices for Maternity* and Bloodsafe's *A Guide to Taking Iron Tablets*.
- Document iron preparation and dose in the patient's record.
- Assess adherence (dose and timing) and ask about side effects at every visit. Refer to Bloodsafe's *A Guide to Taking Iron Tablets* to address side effects.





Clinical Practice Guideline Peninsula Care Goal

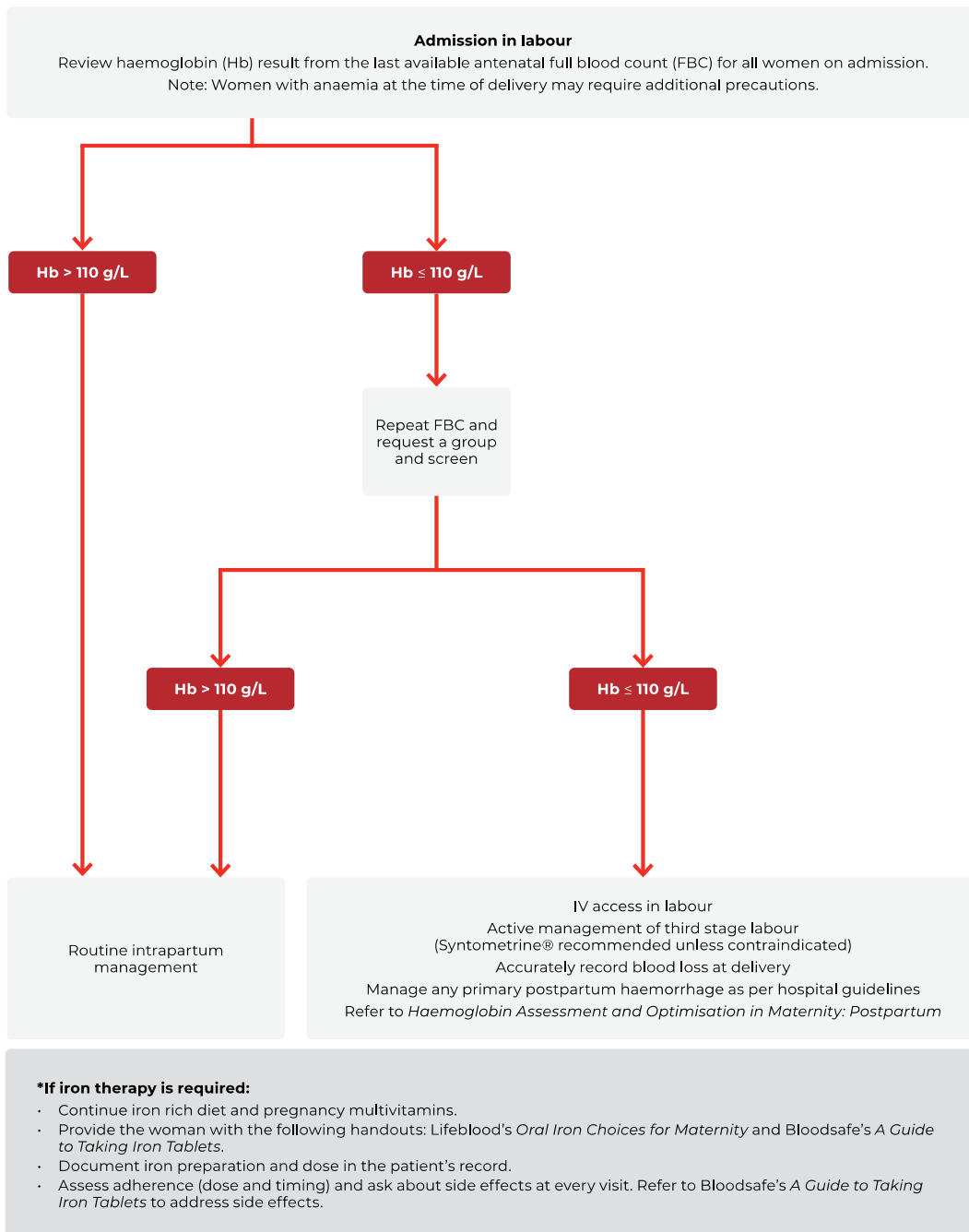
Iron Deficiency and Anaemia in Pregnancy Safe

Appendix 4

Haemoglobin Assessment and Optimisation in Maternity



Intrapartum





Clinical Practice Guideline Peninsula Care Goal

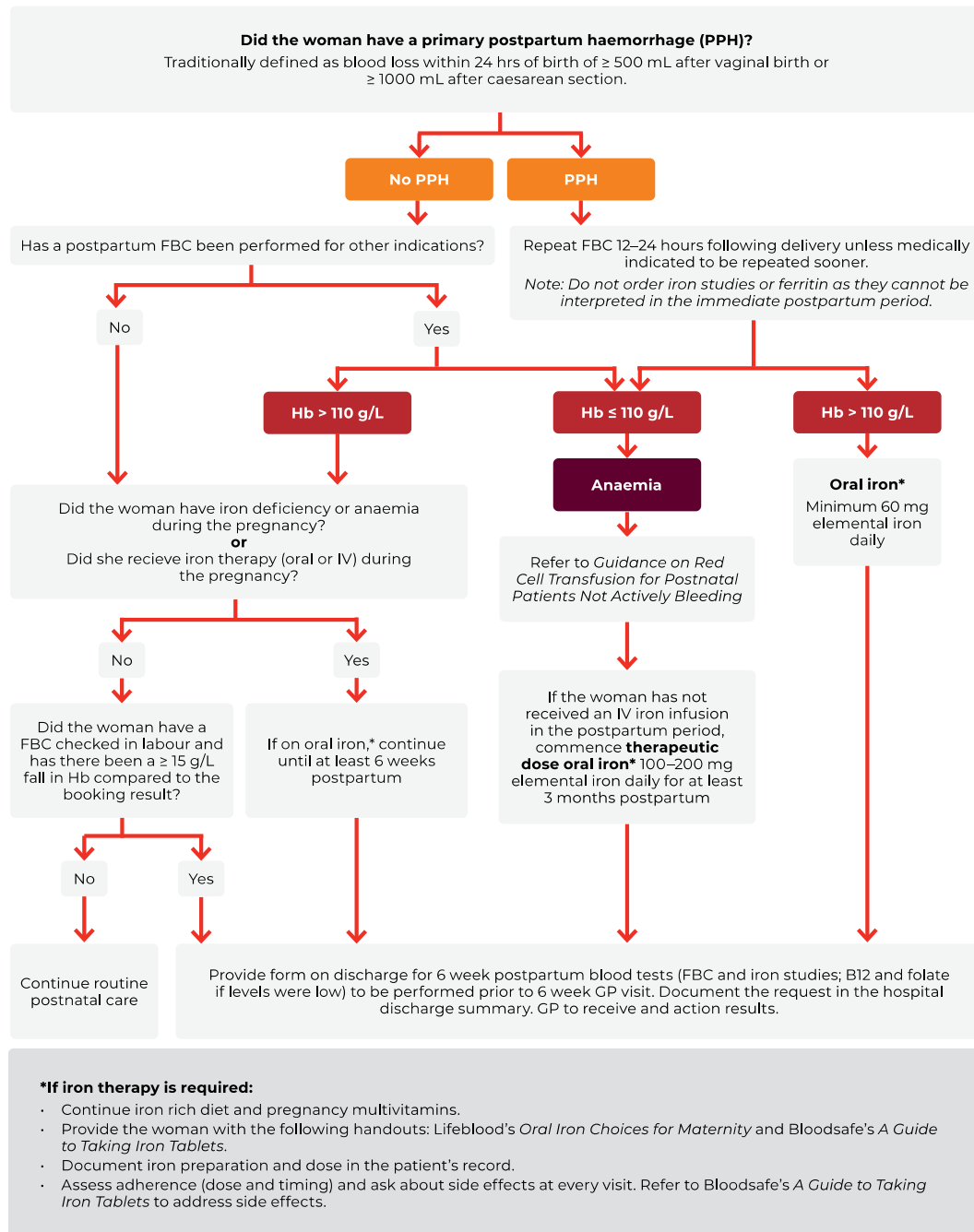
Iron Deficiency and Anaemia in Pregnancy Safe

Appendix 5

Haemoglobin Assessment and Optimisation in Maternity



Postpartum





Clinical Practice Guideline Peninsula Care Goal

Iron Deficiency and Anaemia in Pregnancy Safe

Appendix 6

Information for pregnant women












Oral Iron Choices for Maternity

Woman's name _____
Today's date _____
Date of blood test _____
Haemoglobin (g/L) _____
Ferritin (µg/L) _____
Health professional's signature: _____

It is recommended you begin taking a daily dose of
☐ 60–100 mg of elemental iron ☐ ≥ 100 mg of elemental iron
for the remainder of your pregnancy and for a minimum
of six weeks after the birth of your baby. Continue taking
pregnancy multivitamins.

Follow up with your:

- Maternity Care Provider for a repeat blood test at ____ weeks.
- GP for a repeat blood test six weeks after the birth of your baby.

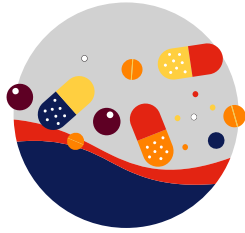
Recommended iron preparations	Elemental iron	Dosage information
<input type="checkbox"/>  Ferro-grad Ferrous sulfate 325 mg tablets	105 mg per tablet	Take one tablet on an empty stomach: <input type="checkbox"/> once a day <input type="checkbox"/> twice a day <input type="checkbox"/> on alternate days
<input type="checkbox"/>  Ferro-grad C Ferrous sulfate 325 mg tablets	105 mg per tablet	Take one tablet on an empty stomach: <input type="checkbox"/> once a day <input type="checkbox"/> twice a day <input type="checkbox"/> on alternate days
<input type="checkbox"/>  Ferro-F-Tab Ferrous fumarate 310 mg tablets	100 mg per tablet	Take one tablet on an empty stomach: <input type="checkbox"/> once a day <input type="checkbox"/> twice a day <input type="checkbox"/> on alternate days
<input type="checkbox"/>  Maltofer Iron polymaltose 370 mg tablets	100 mg per tablet	Take one tablet with food: <input type="checkbox"/> once a day <input type="checkbox"/> twice a day <input type="checkbox"/> on alternate days
<input type="checkbox"/>  Maltofer Syrup Iron polymaltose 370 mg/10 mL oral liquid	100 mg/10 mL	Take ____ mL with food, through a straw to avoid staining teeth.
<input type="checkbox"/>  Ferro-grad F Ferrous sulfate 250 mg tablets	80 mg per tablet	Take one tablet on an empty stomach: <input type="checkbox"/> once a day <input type="checkbox"/> twice a day <input type="checkbox"/> on alternate days
<input type="checkbox"/>  Fefol Iron & Folate Supplement Ferrous sulphate 270 mg capsules	87.4 mg per capsule	Take one tablet on an empty stomach: <input type="checkbox"/> once a day <input type="checkbox"/> twice a day <input type="checkbox"/> on alternate days
<input type="checkbox"/>  Ferro-Tab Ferrous fumarate 200 mg tablets	65.7 mg per tablet	Take one tablet on an empty stomach: <input type="checkbox"/> once a day <input type="checkbox"/> twice a day <input type="checkbox"/> on alternate days
<input type="checkbox"/>  Ferro-Liquid Ferrous sulphate 30 g/mL oral liquid	60 mg/10 mL	Take ____ mL with food, through a straw to avoid staining teeth.





Clinical Practice Guideline Peninsula Care Goal

Iron Deficiency and Anaemia in Pregnancy Safe



Taking iron

Take iron products (except for Maltofer) 1 hour before or 3 hours after meals – ideally with juice (not milk). If this isn't possible, it's better to take iron with food than not at all. Iron is better absorbed if taken with orange juice due to the vitamin C content.

Discuss the timing of any other medications with your healthcare professional, especially those for treating reflux. Keep iron products safely out of reach of children and pets.



Side effects





Side effects may include darkened bowel motions, indigestion, nausea, constipation or diarrhoea.

If you are experiencing indigestion or nausea, try changing the timing so you take your iron supplement with food.

If you are experiencing additional mild symptoms, do not stop taking iron, but try spacing the doses out instead and discuss with your healthcare professional.

Recommended iron preparations vs over-the-counter multivitamins

Over-the-counter multivitamins **DO NOT** contain enough iron to treat iron deficiency anaemia.

	Recommended iron preparation	Over-the-counter multivitamins		
Number of tablets required to meet the daily therapeutic dose for treatment of iron deficiency				
Product	Ferro-grad	Elevit Pregnancy	Floradix Iron and Herbs	Elevit Women's Multi
Elemental iron equivalent	1 tablet = 105 mg	1 tablet = 60 mg <small>(plus other vitamins and minerals including calcium which reduce iron absorption and can increase risk of constipation)</small>	10 mL dose = 10 mg	1 tablet = 5 mg

Important: The information on this page is for illustration purposes only to compare common over-the-counter multivitamins with the recommended iron preparations. Follow instructions on the front page.

lifeblood.com.au

Version 3.0 5 March 2020.
The disclaimer found at transfusion.com.au applies to this resource.