

Early identification and treatment for women at high risk of iron deficiency during pregnancy

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Introduction
Iron deficiency is the leading cause of anaemia during pregnancy, with risks to mother and foetus¹. The British Society for Haematology (BSH) guidelines for iron deficiency anaemia in pregnancy describe criteria of women at high risk of iron deficiency and suggest empirical oral iron supplementation².

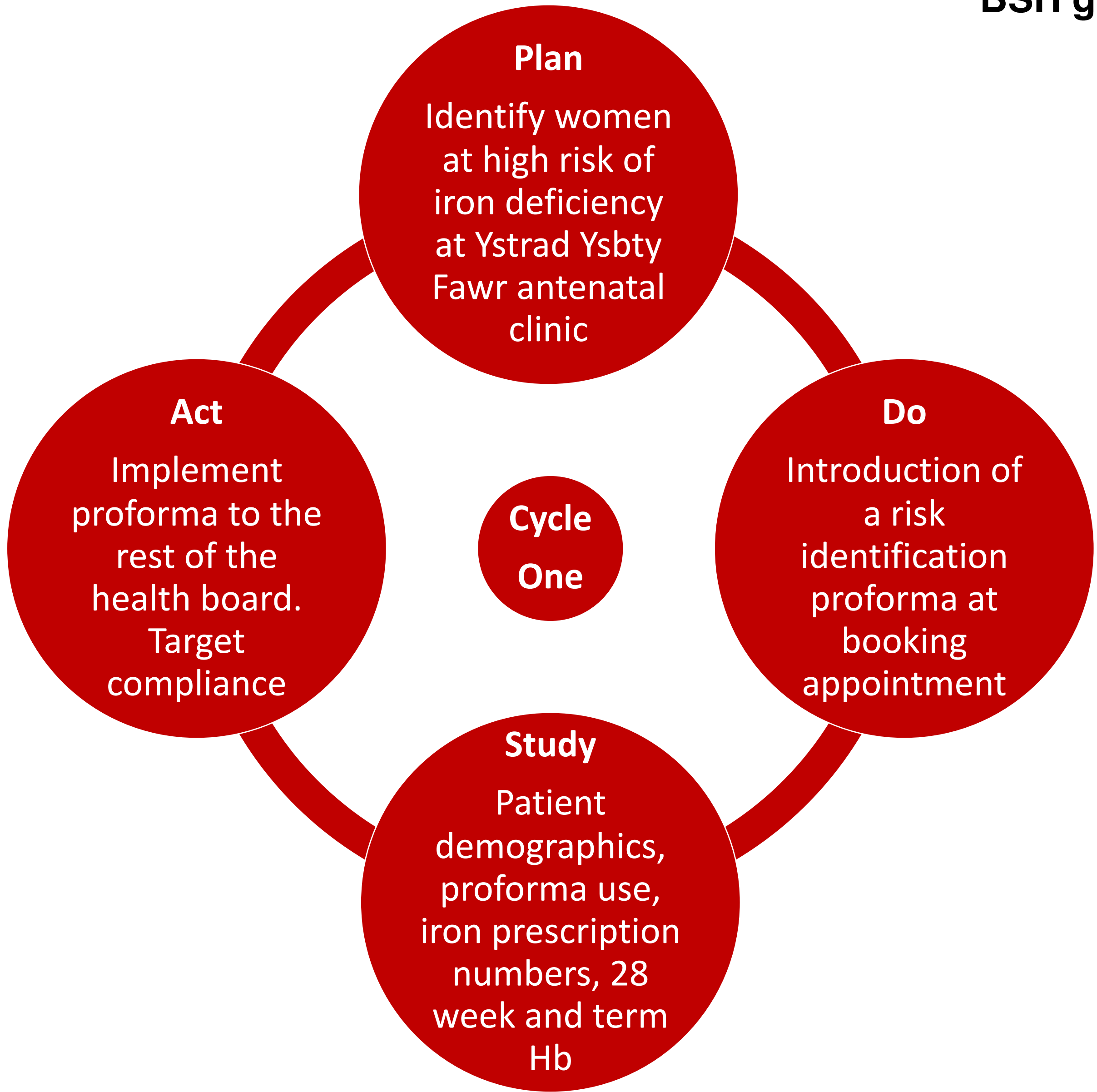
- Aims**
To reduce the incidence of term anaemia in our obstetric population in Aneurin Bevan University Health Board by:
- 1) Earlier identification: the introduction of an iron deficiency risk proforma at booking appointment.
 - 2) Earlier treatment: empirical ferrous fumarate prescribed for those identified as high risk for iron deficiency.



Table 1.

	October 2022 n=117	January 16th to February 15th 2023 n=124	February 16th to March 21st 2023 n=115
Proforma use (%)	0	75 (60%)	87 (73%)
Number of patients with IDA risk factors	n/a	37 (29.8%)	23 (20%)
Oral iron at booking	6 (5.1%)	23 (18.5%)	16 (13.9%)
28 week anaemia	10 (9%)	11 (9.4%)	9 (8%)
IV iron	3 (2.6%)	5 (4%)	2 (1.7%)
Term anaemia	2/93 (2.2%)	9/105 (8.6%)	4/103 (3.9%)

BSH guidelines for identifying women at high risk of iron deficiency²:



- Teenager
- Parity ≥ three
- Multiple pregnancy
- Interpregnancy interval < one year
- Previous anaemia
- Inflammatory bowel disease
- Antenatal haemorrhage
- Vegetarian or vegan diet

Method
Ethical approval was granted by the local research and development team. Patient demographics, iron prescription, 28 week and term haemoglobin (Hb) were collected for women booked at one antenatal clinic (YYF) in our health board. Baseline data was collected for October 2022. In January 2023 a booking proforma was introduced to identify those at risk of low iron as per BSH guidelines. Anaemia was defined as Hb <105 g/L. Those who transferred care to another health board or did not carry to term were excluded. Proforma use and presence of IDA risk factors were collected for those with term anaemia.

Results
Mean age, parity, body mass index and exclusions were similar for each group. A table of pre and post proforma results are shown in Table 1. Of the 13 women with term anaemia, nine (69%) had iron deficiency risk factors. The proforma had been used in 61% although risk factors were not always identified.

Discussion
October’s baseline data showed an anomalously low rate of term anaemia. Possible explanations are that 28 week anaemia was treated effectively in this group or that patients with IDA at term were not identified through lack of term Hb measurement. Introduction of the risk proforma was associated with an increase in prescription of oral iron at booking. Proforma use increased from January to March alongside a reduction in percentage of women with 28 week and term anaemia although numbers are small. However, the number of women with IDA risk factors also decreased raising the possibility that the last cohort were less likely to develop anaemia. Two thirds of women who developed term anaemia had risk factors for iron deficiency. This suggests that the risk proforma should improve our ability to identify those at risk of anaemia but the next challenge is identifying and improving non-compliance with oral iron.

Next steps
A risk proforma will be introduced across all antenatal clinics within the local community and health board.

- The aims for cycle two are:
- 1) Improve treatment of women with iron deficiency risk factors through introduction of a Patient Group Directive for ferrous fumarate 210mg OD.
 - 2) Improve compliance with oral iron therapy through patient and staff education.
 - 3) Continuous monthly measurement of term Hb (% anaemia), intravenous iron and red cell transfusion rates.

References
1. Shah A, Acheson A, Sinclair RCF. Perioperative iron deficiency anaemia. BJA Education. 2023; 23 (10): 372–81.
2. Pavord S, Daru J, Prasannan N, Robinson S, Stanworth S, Girling J. UK guidelines on the management of iron deficiency in pregnancy. British Journal of Haematology. 2020; 188: 819-830.

