# UK National Screening Committee (UK NSC)

## Screening for Screening for Iron Deficiency Anaemia in Pregnancy

**Date:** 25 June 2021

## Contents



### Aim

To ask the UK National Screening Committee (UK NSC) to make a recommendation, based on the evidence presented in this document, whether or not screening for iron deficiency anaemia (IDA) in pregnancy meets the UK NSC criteria for a systematic population screening programme.

## Current Recommendation

In 2006, the UK NSC did not recommend a national screening programme but noted that NICE had issued guidance in this area and all pregnant women should following NICE guidance.

## Evidence Summary

The 2021 evidence summary was undertaken by Costello Medical in accordance to the UK NSC triennial evidence review.

The scope of the 2021 evidence summary addresses 3 questions on the natural history, the benefits and harms of the intervention and of screening programme for IDA during pregnancy. The 2021 UK NSCevidence summary aimed to identify studies to provide evidence on screening and interventions for mild and moderate IDA in pregnancy. The review focuses on mild and moderate IDA because this population reflects the majority of the population that is likely to be detected in a national screening programme.

The conclusion of the 2021 evidence summary is that population screening for screening for IDA in pregnancy should not be recommended. This is because:

- no evidence was identified which reported on the potential harms of IDA in women who had not received treatment (either prescribed treatment or iron supplementation). However; weak evidence from studies where it was unclear if women received iron treatment and/or supplementation suggested that there may be a clinical need to identify women with mild or moderate IDA, although the severity of this problem is unclear; **Criterion 1 not met**

- the absence of studies that explored the benefits and harms of screening prevents an understanding of the number of women with asymptomatic IDA who would not otherwise be identified and the clinical implications of this. Therefore, remains unclear whether a national screening programme would provide greater benefits or result in further harms than the screening already undertaken in clinical practice; **Criterion 9 not met**

- the poor quality of the available evidence on the benefits and harms of treatment prevents robust conclusions being made; **Criterion 11 not met**

Refer to table A below for criteria

## Consultation

A three-month consultation period was hosted on the UK NSC website. Direct emails were sent to 15 stakeholders. (Appendix A)

Comments were received from the following 3 stakeholders: (see Appendix B for comments):

- Royal College of General Practitioners

- Dr Andrew Fletcheer Birmingham Womens and Childrens Hospital

- Nicola Svenson Hull University Teaching Hospitals NHS Trust (list stakeholders that submitted comments)

Out of 3 stakeholders, one agreed with the recommendation, the remaining stakeholders did not provide a direct statement.

One stakeholder asked the reviewers to clarify some points such as:

- clarify the distinction between iron deficiency (ID) without anaemia and IDA:

  Response: we have reviewed the manuscript as discussed and made minor changes to the results section of Question 1, as well as the introduction, to ensure that the distinction between ID and IDA is clear. Also, where studies reporting on ID and IDA were reported, results have in generally been discussed separately

- because more evidence is needed to help guide the recommendation care must be made that the UK NSC does not recommend stopping measuring full blood count (FBC) through pregnancy:

  Response: the recommendation was carefully drafted to ensure that this does not happens. The UK NSC recommendation refers to the NICE recommendation which recommends offering a blood test to check FBC during pregnancy

A second set of comments, acknowledges there is insufficient evidence for defining haemoglobin levels during pregnancy and what is considered normal. However, it points out that there are several things that can influence or cause variations in iron level during pregnancy such as diet age and socioeconomic background.

Response: the evidence summary discusses some of these issues; however, we highlighted and discussed in more details some of these issues in the executive summary, introduction or uncertainties sections of the review as appropriate.

## Recommendation

The Committee is asked to approve the following recommendation:

A systematic population screening for IDA in pregnancy is not recommended in the UK. However, the UK NSC recognise that testing for IDA is a long-established clinical practice in antenatal care in the UK, and that it is recommended in national guidance produced by NICE and the BSH.

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## Section 1 - Criteria for appraising the viability, effectiveness and appropriateness of a screening programme

This section looks at whether certain UK NSC criteria have been met when reviewing a given screening programme. Only the criteria evaluated by the current review have been included below.

### The Condition

**Criterion 1:** The condition should be an important health problem as judged by its frequency and/or severity. The epidemiology, incidence, prevalence and natural history of the condition should be understood, including development from latent to declared disease and/or there should be robust evidence about the association between the risk or disease marker and serious or treatable disease.

- **Criterion 1 has not been met**

### The Intervention

**Criterion 9:** There should be an effective intervention for patients identified through screening, with evidence that intervention at a pre-symptomatic phase leads to better outcomes for the screened individual compared with usual care. Evidence relating to wider benefits of screening, for example those relating to family members, should be taken into account where available. However, where there is no prospect of benefit for the individual screened then the screening programme shouldn't be further considered.

- **Criterion 9 has not been met**

### The Screening programme

**Criterion 11:** There should be evidence from high quality randomised controlled trials that the screening programme is effective in reducing mortality or morbidity. Where screening is aimed solely at providing information to allow the person being screened to make an "informed choice" (for example; Down's syndrome, cystic fibrosis carrier screening), there must be evidence from high quality trials that the test accurately measures risk. The information that is provided about the test and its outcome must be of value and readily understood by the individual being screened.

- **Criterion 11 has not been met**

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## Appendix A: List of Organisations Contacted

1. Association for Improvements in the Maternity Services
2. British Association of Perinatal Medicine
3. British Maternal & Fetal Medicine Society
4. Faculty of Public Health
5. Institute of Child Health
6. National Childbirth Trust
7. Royal College of General Practitioners
8. Royal College of Midwives
9. Royal College of Obstetricians and Gynaecologists
10. Royal College of Paediatrics and Child Health
11. Royal College of Physicians
12. Royal College of Physicians and Surgeons of Glasgow
13. Royal College of Physicians of Edinburgh
14. Royal College of Pathologists.
15. Dr Sue Pavord, Consultant Haematologist, Oxford University Hospitals NHS FT

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## Appendix B: Consultation Responses

Note: Personally identifiable information has been redacted from certain comments, where individuals have chosen not to have personal details made public

1)From the Royal College of General Practitioners

Dear sirs

The RCGP supports the current position of the UK NSC *not* to undertake a national screening programme of pregnant women for iron deficiency anaemia.

Best wishes

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xxxx xxxx xxxx xxxx xxxx xxxx

xxxx xxxx

xxxx xxxx xxxx xxxx

Tel: xxxx xxxx | xxxx xxxx

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2)Dear UK NSC,

Just a couple of attached comments about your IDA in Pregnancy Document.

They are general comments rather than about specific parts.

If you needed a haematologist – who has recently moved from purely adult practice to paediatric practice – to be involved please let me know.

Would you also consider approaching the Royal College of Pathologists as Stakeholders as they are heavily involved in guiding about tests and test frequency.

There are a couple of groups involved in research in this area – xxxx xxxx in xxxx xxxx as a haematologist with a large interest in haematology in pregnancy, and xxxx xxxx, a xxxx xxxx, in xxxx xxxxTeaching Hospitals who has a large research interest in iron metabolism and laboratory assessment of it.

There may be some scope to incorporate comments about the forthcoming British Society of haematology Good Practice Paper for lab investigation of iron deficiency and recent Transfusion 2024 that included description about patient blood management of anyone who may be at risk of transfusion as the best transfusion is one avoided.

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3)xxxx xxxx

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| **Name:** | Dr Andrew Fletcheer | **Email address:** | xxxx xxxx |
| **Organisation (if appropriate):** | Birmingham Womens and Childrens Hospital | | |
| **Role:** | **Locum Consultant Haematologist** | | |

**Do you consent to your name being published on the UK NSC website alongside your response?**

**Yes**

| Section and / or page number | Text or issue to which comments relate | Comment<br>*Please use a new row for each comment and add extra rows as required*. |
|---|---|---|
| **General Comments** | | **You need to make the distinction of iron deficiency without anaemia and iron deficiency anaemia very clear as they have very different symptoms and signs.**<br>**Anaemia is one of the last manifestations of iron deficiency with the following problems documented:**<br>**-Fatigue and reduced quality of life**<br>**-Abnormalities of mucous membranes – mouth, upper GI tract and genital tract**<br>**-Skin, nail and hair changes**<br>**-Delayed wound healing**<br>**-Developmental delay**<br>**Several of these will have effects on maternal and child health both in pregnancy, due to its complications and in the child after delivery.** |

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| | | **Iron metabolism is also affected by other coexisting chronic disease and these affect hepcidin the iron regulating hormone and these conditions existence will affect how tests for iron and the FBC are interpreted.**<br>**More evidence is needed to help guide the recommendations and care must be made that your summary is not telling people to stop measuring FBC through pregnancy. Optimisation of haemoglobin is good practice (see Transfusion 2024 from NHSBT) in anyone that may require a surgical intervention – like pregnant women to reduce the risks of transfusion and other potentially harmful interventions.**<br>**There is on-going research in Hull University Teaching Hospitals Department of Haematology being done by the Clinical Scientist there that may help guide this argument.** |

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| **Name:** | Nicola Svenson | **Email address:** | XXXX XXXX |
| **Organisation (if appropriate):** | Hull University Teaching Hospitals NHS Trust | | |
| **Role:** | **Principal Clinical Scientist and Trainee Consultant Clinical Scientist (HSST)** | | |

**Do you consent to your name being published on the UK NSC website alongside your response?**

**Yes**

| **Section and / or page number** | **Text or issue to which comments relate** | **Comment**<br>*Please use a new row for each comment and add extra rows as required*. |
|---|---|---|
| **General Comments** | **General** | As acknowledged there is insufficient evidence for defined haemoglobin levels during pregnancy and variation as to what is considered as normal.<br><br>Diet may cause variations – there is a lack of studies of dietary sources vs iron supplementation<br><br>Physiological anaemia – the majority of evidence suggests that the cause of anaemia in pregnancy is mainly attributed to iron deficiency, other causes of anaemia need to be considered i.e. B12/folate and effect of inflammation in iron markers<br><br>Compliance issues of taking iron and lack of women who take iron supplements vs those not prescribed iron. It is not easy /difficult to study who is and who isn't taking iron supplementation |

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| | | Hb is not a good marker of iron deficiency but is widely used to screen pregnant and non-pregnant subjects – consideration of new additional FBC parameters i.e. Ret-He may offer additional evidence. Additionally, Hb is used to assess response to iron but is prone to uncertainty including laboratory uncertainty of measurement. Measurement of reticulocytes may be a more useful marker although there are virtually no documented studies less than 28 weeks<br><br>Only one UK study is included in the review which is a retrospective cohort large study group but Hb levels were not reported<br><br>Frequency of anaemia is also known to vary with age and socioeconomic background<br><br>As highlighted many of the studies are significantly biased<br><br>Multi gravida anaemia effect is unknown – studies are required<br><br>No studies as to cost of iron supplementation vs laboratory testing<br><br>Very limited data for pregnant women without anaemia<br><br>Causes other than iron deficiency should be considered as Iron deficiency is not the only cause of anaemia in pregnancy one study demonstrated co-existing deficiency in 34% of subjects (Shields, et al., 2011)<br><br>More longitudinal studies are required across gestation to establish cut offs for iron indicators in relation to trimester in pregnancy and the need to adjust for inflammation with more high quality prospective studies required especially in first and second trimesters. |

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| | | Current study https://www.hra.nhs.uk/planning-and-improving-research/application-summaries/research-summaries/iron-and-vitamin-deficiency-in-pregnancy/ |