GUIDELINE FOR THE MANAGEMENT OF PATIENTS WITH ANAEMIA

CONTENTS AND PAGE NUMBER

Guideline for the Management of Medical Patients with Anaemia 1

Contents 2

Aim and Scope of the guideline 3

Deviation from National Guidance 3

Roles and Responsibilities...4

The Management of Anaemia in the Primary Care Setting...5
Patients Presenting with Symptomatic Anaemia……………………………………..5
Patients Presenting with Suspected Anaemia …………………………………….5
Patients Presenting with Chronic Anaemia who have been Investigated …………..5

Ambulatory Management (1 day) of Patients Presenting with Symptomatic Iron Deficiency Anaemia...8

Management of Patients found during Pre-operative Assessment to have Iron Deficiency Anaemia ……………………………………………………………………………………..11

Monitoring and Audit of Guideline..12

Sources/References 13

Glossery of Terms 13

Associated Documents 13

Appendix 1 – Flow Chart 2: Management of Anaemia...14
Appendix 2 – Flow Chart 1: GP Investigation of Suspected Anaemia in a Stable Patient .14
Appendix 3 – Flow Chart 3: Management of Chronic Anaemia due to Iron Deficiency......14
Appendix 4 – Flow Chart 4: Ambulatory Management (1 day) of Patients Presenting with Symptomatic Iron Deficiency Anaemia 14
Appendix 5 – Flow Chart 5: Management of Patients found during Pre-operative Assessment to have Iron Deficiency Anaemia ………………………………………………..14

Acknowledgements...14

EQUALITY IMPACT ASSESSMENT 15

Document Information Box 16

AIM AND SCOPE OF THE GUIDELINE

The aim of this guideline is to help clinicians to identify anaemia and treat appropriately. By doing so the Trust can prevent emergency admission of patients presenting with iron deficiency, prevent the inappropriate use of blood for these patients and promote ambulatory management (same day) for this group of patients. Managing anaemia found at pre-operative assessment can prevent the inappropriate use of blood and ensure the patient is investigated for the incidental finding of anaemia.

Scope:
To provide guidance for:

- Primary Care Clinicians on the management of suspected anaemia in stable patients.
- Primary Care Clinicians in the management of chronic anaemia due to iron deficiency, when oral iron cannot be tolerated.
- Hospital Clinicians on the ambulatory management for patients presenting with symptomatic iron deficiency anaemia
- Management of iron deficiency anaemia found during pre-operative assessment prior to surgery

Introduction
An “Anaemia Pathway” has been developed after consultation with hospital clinicians and GP representatives. The pathway starts in the community with two flow charts to aid GPs of the testing requirements, interpretation of results and the appropriate referral of stable patients presenting with suspected anaemia.

As part of the management plan for patients with symptomatic anaemia, GPs will be able to contact the hospital via the Patient Flow Team, to make an immediate appointment for the patient to attend a Gastroenterology Clinic (to investigate the cause of anaemia) and the Ambulatory Emergency Care Centre (to treat symptoms of anaemia). A flow chart has been developed to aid the hospital clinicians on the ambulatory management of these patients.

To complete the policy and cover all aspects, two further pathways have been developed. One pathway for the “Management of Chronic Anaemia due to Iron Deficiency (when oral iron cannot be tolerated)” and another for the “Management of Patients found at Pre-Operative assessment to have Iron Deficiency Anaemia”.

All clinicians should be aware that all patients should have the cause of the anaemia investigated as per the pathway and not solely be treated for the symptoms of anaemia.

DEVIATION FROM NATIONAL GUIDANCE

Local; no national guidance

DESIGNATED ROLES AND RESPONSIBILITIES

Board of Directors

It is the responsibility of the Board of Directors to ensure systems and processes are in place to monitor and implement this procedural document.

Chief Executive

In line with the requirements of Governance, the Chief Executive carries ultimate responsibility for assuring the quality of the services provided by the Trust that is included within this procedural document.

Executive Directors

All Executive Directors are the authorised Leads to sign off corporate policies within their areas of responsibility.

Delegated Executive Lead

The Medical Director has been delegated by the Chief Executive to take the Executive ownership for this procedural document

Specialty Clinicians and Divisional Heads of Nursing

Specialty Clinicians and the Divisional Heads of Nursing are responsible for adherence to these guidelines within their areas of responsibility.

Nursing staff

Ward Mangers are responsible for ensuring that nursing staff are aware of these guidelines and their roles within them.

Primary Care

General Practitioners (GPs**)** within the community setting are responsible for following this guideline by ensuring that the correct tests are performed and appropriate referrals are made.
For patients presenting with symptomatic anaemia the GP is responsible for contacting the "Patient Flow Team" for an urgent referral to the Hospital.

Hospital Transfusion Committee (HTC)

As part of "Patient Blood Management" the HTC is responsible for the appropriate use of blood by developing these guidelines and ensuring the content of these guidelines are approved and adhered to.

Note: Medical and nursing staff from the Divisions attend the HTC. It is their responsibility to ensure that members of staff in their area are aware of this guidance.

THE MANAGEMENT OF ANAEMIA IN THE PRIMARY CARE SETTING (APPENDIX 1)

Patients Presenting with Symptomatic Anaemia

For patients presenting with symptomatic anaemia, contact the "Patient Flow Team" at the Hospital. Telephone number: 01925 275205.

The Patient Flow Team will:

- Make the patient an urgent appointment at the Ambulatory Emergency Care Centre (date/time convenient for the patient) for appropriate treatment to relieve the symptoms of anaemia.
- Make the patient a Cancer Fast Track (CFT) appointment to Gastroenterology (or appropriate speciality) for investigations into the underlying cause of anaemia.
- Complete the referral proforma and scan this into the Lorenzo System. The original copy of the proforma will be kept for audit purpose.

Referral Proforma
to Ambulatory Emer

Patients Presenting with Suspected Anaemia

For patients presenting with suspected anaemia or subsequent blood test results suggesting anaemia; the patient should be managed in the community and referred to Gastroenterology (or appropriate speciality) for investigations into the underlying cause (Appendix 1: Flow Chart 2).

Procedure (Appendix 2 - Flow Chart 1):

1. Select "FBC plus" on the ICE system (Electronic Requesting System).
    - If the haemoglobin is normal the laboratory will automatically perform a ferritin test.
    - If the haemoglobin is low the laboratory will automatically perform the haematinics (B12, folate and iron profile).

2. Review the results

3. Give appropriate treatment e.g. oral iron, B12, folate etc.

4. Refer the patient to the Gastroenterology (or appropriate speciality) for investigations into the underlying cause of anaemia as per Flow Chart 2.

Patients Presenting with Chronic Anaemia who have been Investigated

Chronic Anaemia due to Iron Deficiency:

For patients with chronic anaemia due to iron deficiency that have been investigated and are stable with no additional problems, manage as per Appendix 3 - Flow Chart 3. It is

important to monitor the ferritin level of these patients; the haemoglobin result may be normal but if the ferritin level drops below 100µg/L, IV iron will be needed to prevent the patient's haemoglobin dropping and causing symptoms of anaemia.

For patients requiring iron where oral iron cannot be tolerated, telephone and fax a referral back to the Patient's Consultant via their secretary to arrange IV iron to be given to the patient.

Gastroenterology (or the appropriate speciality) will either ring the Ambulatory Emergency Care Centre (Warrington Site) and make an appointment for the patient to attend within the following week for treatment, or make a referral on the Hospital's Referral System for the patient to attend the PIU (Halton Site). IV Iron needs to be prescribed under the referring consultant.

In these patients, if at any stage the patient experiences different symptoms or the frequency of treatment changes, refer the patient back to the appropriate speciality as a new referral for new investigation.

For Referrals to the Ambulatory Emergency Care Centre

Contact the Patient Flow Team on 5205 to book the patient an appointment for IV iron to be given at the Ambulatory Emergency Care Centre.

- Give the referring Consultant's details in case of any problems or delays with the referral
- Consider transfusion if the Hb is <70g/l

Note: Clear instructions must be given to enable the Ambulatory Emergency Care Centre to proceed with the treatment. The Consultant/Specialist Nurse can ring the Ambulatory Emergency Care Centre directly to make this appointment.

For Referrals to the PIU at the Halton Site by the Consultant/Specialist Nurse:

Only the patient's Consultant or Specialist Nurse can refer to the PIU for IV iron and/or a transfusion. The following MUST be performed:

- Complete an in-patient referral to the PIU via the Meditech/Lorenzo System giving clear instructions.
- State the Surgeon as the named Consultant on the referral.
- IV iron must be prescribed on the "Pink Fluid Sheet".
- Transfusions must be prescribed on the "Transfusion Prescription/Record Form".
- Fax prescription and inform the PIU of the referral by phone.

Chronic Anaemia as a Consequence of Disease:

Cancer patients presenting with a low haemoglobin (<70g/l) who are being treated under a Consultant from the Clatterbridge Hospital must be referred back to Clatterbridge Hospital.

The Consultant at the Clatterbridge Hospital can refer the patient to the CANtreat Centre at the Halton hospital for transfusion(s).

Table 1: Normal/Reference Ranges that might be useful to the Primary Care Clinician

Parameter	Normal Value
Normal Haemoglobin Levels (Hb)	• >125 g/l for women • >130 g/l for males
Iron Deficiency	Usually defined as: • Low ferritin (<30µg/l), low iron, high TIBC (Total Iron Binding Capacity), high transferrin, low iron saturation.
Anaemia of Chronic Disease	• Normal/high ferritin, usually low TIBC, low transferrin, normal/low iron saturation, low serum iron.
B12 Reference Range	• 180 – 910 ng/l.
Folate Reference Range	• Normal: >5.4 ng/ml. • Intermediate deficiency: between 3 – 5.4 ng/ml • Deficiency: <3 ng/ml
Haematinic Replacement	• Replace B12 first if B12 and folate are deficient

AMBULATORY MANAGEMENT (1 DAY) OF PATIENTS PRESENTING WITH SYMPTOMATIC IRON DEFICIENCY ANAEMIA

Symptomatic Anaemia

For patients presenting with symptomatic iron deficiency anaemia manage as per Appendix 4, “Ambulatory Management (1 day) of Patients Presenting with Symptomatic Iron Deficiency Anaemia”

Procedure (Appendix 4):

1. **Review Patient.**

    - Review the patient and check the blood results; these should have been performed by the GP.
    - Take and send a “Group and Save” sample to the laboratory with a correctly completed request form.
    - Review the transfusion history with the patient and ensure the request form contains clinical details. This will prevent any delays if a transfusion is later required.
    - Check the system, if there is no historic blood group on the system a “Check Group” sample will be required before the Transfusion Department will issue blood for the patient (if needed).
    - Give the patient the information sheet explaining the procedure for the day, “Patients with Symptomatic Iron Deficiency Anaemia” (see Patient Information Leaflet section below).

2. **Treat Patient.**

    For Patients with Iron Deficiency Anaemia:

    Ferinject® (Ferric Carboxymaltose) can be given to replace the iron stores of a patient with iron deficiency anaemia as defined by blood tests; ferritin <30µg/l, low iron, high TIBC, high transferrin, low iron saturation.

    - IV iron must be prescribed on the ‘Pink Fluid Sheet’.
    - A stock of 500mg and 1000mg of Ferinject® is kept on the AEC, see risk assessment below:

Risk Assessment form for Ferinject or

For patients weighing greater or equal to 50kg and:

- Hb <100g/l: Infuse 1000mg of Ferinject® in 250mls of 0.9% Sodium Chloride (maximum dilution) over 30 minutes and make the patient an appointment to return the following week for an additional 500mgs of iron. If the patient weighs 70kg or more up to an additional 1000mgs can be given.

- Hb ≥100g/l: Infuse 1000mg of Ferinject® in 250mls of 0.9% Sodium Chloride over 30 minutes.

Contact the Pharmacist for dosage requirements of iron for patients:
- Weighing <50kg
- With Hb ≥130g/l
- Overweight/Obese patients

Note:
- For overweight patients, a normal body weight/blood volume relationship should be assumed when determining the iron requirement.
- Post repletion, regular assessments should be completed to ensure that iron levels are correct and maintained.
- Ferinject® must not be administered by the subcutaneous or intramuscular route.
- For stability reasons, dilutions to concentrations less than 2mg iron/ml are not permissible.
- Due to risk of hypersensitivity with iron infusions, patients must be monitored during infusion and for at least 30 minutes after as per the manufactures administration guide.

Maximum Tolerated Single Dose:
- A cumulative iron dose of 500mg should not be exceeded for patients with a body weight <35kg.
- Maximum single dose of Ferinject® should not exceed 1000mg of iron (20ml) per day. DO NOT administer 1000mg of iron MORE THAN once a week.
- A maximum single dose = 20mg per kg body weight not to exceed 1000mg of Iron – Contact the Pharmacist for advice if patient body weight less than 50kg.

Additional Doses:
- The patient can be brought back the following week for the additional iron.
- It can be given prior to transfusing the patient if necessary.

For Patients Needing a Blood Transfusion:

Transfuse 1 unit of blood over 2hrs (max 4hrs) to relieve symptoms if:
- Hb less than 70g/l
  or
- Maintain above 80g/l for patients with cardio vascular problems.
- Prescribe blood on the 'Transfusion Prescription/Record Form'.

Reassess the patient, check Hb and transfuse another unit of blood if the criteria above is not met.

A patient information leaflet "Will I need a blood transfusion?" should be given to all patients being transfused explaining all about the blood being transfused. The leaflet is available on all wards.

Note: Caution with blood transfusion in chronically anaemic patients due to the risk of circulatory overload.

For Patients with B12 or Folate Deficiency:

- B12 Reference Range: 180 – 910 ng/l
- Folate Reference Range:
  - Normal: greater than 5.4 ng/ml
  - Intermediate deficiency: between 3 – 5.4 ng/ml
  - Deficiency: less than 3 ng/ml

Note: If the patient is B12 and folate deficient, replace B12 first, to avoid precipitating neurological effects.

3. **Review Patient.**

No Clinical Improvement:

- These patients may need further management as an in-patient.

Clinical Improvement/Discharge:

- Ensure the patient has a CFT appointment for Gastroenterology; this should have been made at the time of referral by the Patient Flow Team. Print the appointment letter from the system and give it to the patient.
- If required, give the patient a follow-up appointment for additional treatment.
- Discharge the patient and inform the GP on the discharge letter.
- If the patient has been transfused; give the patient a leaflet titled "Advice following a Blood Transfusion". This gives the patient information about what to do if they become unwell in the following 24hrs. A section at the back of the leaflet needs completing prior to giving the leaflet to the patient.

Patient Information Leaflets:

Three patient information leaflets are available, two of which are produced by the Trust:

1. Patient information about the process

Ambulatory Care - Patient Information

2. Advice Following a Blood Transfusion

Patient Leaflet - Advice for patients f

3. Will I Need a Blood Transfusion? – This explains the risks and benefits of transfusion: NHSBT leaflet.

MANAGEMENT OF PATIENTS FOUND DURING PRE-OPERATIVE ASSESSMENT TO HAVE IRON DEFICIENCY ANAEMIA

Patients Found to have Iron Deficiency Anaemia during Pre-Operative Assessment

Iron deficiency anaemia defined as:

- Ferritin <30µg/l, low iron, high TIBC, high transferrin, low iron saturation.

Iron deficiency anaemia found during pre-operative assessment should be investigated and treated as per national guidance. A clinical assessment should be made to whether to proceed with the surgery or postpone until the anaemia has been investigated. Flow chart 4 (appendix 5) has been developed to aid the clinician in this decision.

Procedure (Appendix 5):

Assess the patient

The Surgeon must consider:

- Whether to proceed with the surgery or to postpone it until the cause of anaemia has been investigated.
- Treatment with oral iron (if time permits) or a referral to the Ambulatory Emergency Care Centre for IV iron (Ferinject®)
- Transfusion if the Hb is <80g/l and the operation has to go ahead.

Proceeding with the Surgery

The Surgeon must discuss the treatment plan with the Pre-op Nurses and the Anaesthetist. Once it is decided to continue with the surgery, the Pre-op Nurse can contact the Patient Flow Team on 5205 to book the patient an appointment for IV iron to be given at the Ambulatory Emergency Care Centre.

- Give the referring Consultant's details in case of any problems or delays with the referral
- Consider transfusion if the Hb is <80g/l
- Inform the patient of the time and date and of the treatment plan

Note: Clear instructions must be given to enable the Ambulatory Emergency Care Centre to proceed with the treatment.

Post-surgery, at discharge, the Clinical Team must:

- Request a Hb be taken at the follow up appointment 4-6 weeks post-surgery
- Ensure the GP is aware of the treatment and the findings of anaemia

Post-surgery Follow-up

At the post-op appointment the Clinical Team must:

- Check the Hb result

- Refer unresolved anaemia or incidental findings of anaemia (not related to surgery) to the Patient Flow Team for investigations into the cause of anaemia via the Ambulatory Pathway. If already treated with IV iron pre-surgery; these patients will only need a Gastroenterology referral. Contact the Patient Flow Team on 5205 for a Cancer Fast Track (CFT) appointment to Gastroenterology (or appropriate speciality) and inform the patient's GP of the decision.

Postponing the Surgery

If the surgery is to be postponed, contact the Patient Flow Team on 5202 for investigations into the cause of anaemia via the Ambulatory Pathway; an appointment will be made for the patient at the next CFT gastroenterology clinic. If the patient is suffering symptoms of anaemia, request treatment with IV iron at the Ambulatory Emergency Care Centre. Inform the GP of the care plan for the patient.

MONITORING AND AUDIT OF GUIDELINE

Minimum requirements to be monitored	**Process for monitoring e.g. audit**	**Responsible individual/ group/committee**	**Frequency of monitoring**	**Responsible individual/ group/ committee for review of results**	**Responsible individual/ group/ committee for development of action plan**	**Responsible individual/group/ committee for monitoring action plan and implementation**
Adherence to Guidelines	Audit	Transfusion Specialist Hospital Transfusion Committee	Two yearly	Transfusion Team	Hospital Transfusion Committee	Transfusion Specialist Hospital Transfusion Committee

SOURCES/REFERENCES

Ferinject® (ferric carboxymaltose) SPC
https://www.medicines.org.uk/emc/medicine/24167

Guidelines for the Management of Iron Deficiency Anaemia
A F Goddard, A S McIntyre, B B Scott for the British Society of Gastroenterology
Gut 2000; 46:iv1-iv5 doi:10.1136/gut.46.suppl_4.iv1

Patient Blood Management
http://www.aabb.org/resources/bct/pbm/pages/default.aspx

NICE Guidance 24: Blood Transfusion
https://www.nice.org.uk/guidance/ng24

GLOSSARY OF TERMS

A+E: Accident and Emergency

AEC: Ambulatory Emergency Care

CFT: Cancer Fast Track

FBC: Full Blood Count

GP: General Practitioner

HTC: Hospital Transfusion Committee

Hb: Haemoglobin

PIU: Patient Investigation Unit

SPC: Summary of Product Characteristics

TIBC: Total Iron Binding Capacity

ASSOCIATED DOCUMENTS

Administration of Blood and Blood Components Policy
Located on CIRIS

APPENDIX 1 – FLOW CHART 2: MANAGEMENT OF ANAEMIA

Flow Chart 2
Management of Ana

APPENDIX 2 – FLOW CHART 1: GP INVESTIGATION OF SUSPECTED ANAEMIA IN A STABLE PATIENT

Flow Chart 1 GP
Investigation of Sus

APPENDIX 3 – FLOW CHART 3: MANAGEMENT OF CHRONIC ANAEMIA DUE TO IRON DEFICIENCY WHEN ORAL IRON CANNOT BE TOLERATED OR DOES NOT WORK

Flow Chart 3
Management of Chr

APPENDIX 4 – AMBULATORY MANAGEMENT (1 DAY) OF PATIENTS PRESENTING WITH SYMPTOMATIC IRON DEFICIENT ANAEMIA

Anaemia Pathway
15 08 16.doc

APPENDIX 5 – FLOW CHART 4: MANAGEMENT OF PATIENTS FOUND DURING PRE-OPERATIVE ASSESSMENT TO HAVE IRON DEFICIENT ANAEMIA

Flow Chart 4
Management of Pts

ACKNOWLEDGEMENTS

Acknowledgements to Wrightington, Wigan and Leigh NHS Foundation Trust for their initial input into Flow Chart 2.

EQUALITY IMPACT ASSESSMENT

To be completed and attached to any policy or procedural document when submitted to the appropriate committee for consideration and approval.

Title Guideline for the Management of Patients with Anaemia		
What is being considered?	Policy	
	Guideline	X
	Decision	
	Other (please state)	
Is there potential for an adverse impact against the protected groups below? Age Disability Gender Reassignment Marriage and Civil Partnership Pregnancy and Maternity Race Religion and Belief Sex (Gender) Sexual Orientation Human Rights articles	Yes	
	No	X
If you are unsure, please contact the Equality and Diversity Specialist - 5229		
On what basis was this decision made?		
National Guidelines e.g NICE / NSPA / HSE / DH (other)		
Committee / Other meeting		X
Previous Equality screening		
With regard to the general duty of the Equality Act 2010, the above function is deemed to have no equality relevance. Equality relevance decision by Hospital Transfusion Committee ~~Title /~~ Committee Date: 22/10/2015		
The Equality Act 2010 has brought a new equality to all public authorities, which replaced the race, disability and gender equality duties. This Equality Relevance Assessment provides assurance of the steps Warrington and Halton Hospitals NHS foundation Trust is taking in meeting its statutory obligation to pay due regard to: Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act Advance equality of opportunity between people who share a protected characteristic and those who do not. Foster good relations between people who share a protected characteristic and those who do not For further information or guidance please contact - Joe O'Grady, Equality and Diversity Specialist x 5229 joe.ogrady@whh.nhs.uk		

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