University Hospitals Birmingham NHS
NHS Foundation Trust

Expanded Practice Protocol for the Performance of Venesection in the Haematology Outpatient Department/Ward 621 for the Treatment of Patients with Haemochromatosis and Polycythaemia

CONTROLLED DOCUMENT

CATEGORY:	**Procedural Document**
CLASSIFICATION:	**Clinical**
PURPOSE	**This protocol supports registered and identified non-registered nurses working in the haematology outpatient department and on ward 621 to undertake venesection for the treatment of patients with haemochromatosis and polycythaemia.**
Controlled Document Number:	**859**
Version Number:	**2**
Controlled Document Sponsor:	**Executive Chief Nurse**
Controlled Document Lead:	**Ward 621 Apheresis charge nurse / senior Sister/Haematology Manager**
Approved By:	**Executive Chief Nurse** **Executive Medical Director (or nominated deputy)** **Associate Director of Nursing, Division D** **Matron, Haematology** **Clinical Service Lead, Haematology**
On:	**May 2017**
Review Date:	**April 2020**
Distribution: • **Essential Reading for:** • **Information for:**	**All registered and identified non-registered nurses working in the haematology outpatient department/ward 621 who currently undertake the practice of venesection for the treatment of patients with haemochromatosis and polycythaemia, and all nurses working in the haematology outpatient department/ward 621 who wish to expand their practice to include this skill.** **All clinical staff working in the speciality of haematology.**

EVIDENCE FOR PRACTICE

Hereditary haemochromatosis is a rare disease, in which the gastrointestinal tract absorbs an excess of iron. It is pathologically characterised by the deposition of iron stores throughout organs of the body; most commonly in the liver. Excess iron storage in the liver can lead to hepatomegaly cirrhosis and hepatoma. (National Digestive Diseases Information Clearinghouse, 2007).

Polycythaemia Vera is where an individual has a high concentration of red blood cells in the blood. This results in a reduced blood flow as the blood thickens therefore reducing its ability to effectively circulate throughout the vessels to the organs. Consequently this can cause complications such as blood clots, bleeding problems (such as nosebleeds and bruising) and gout. (NICE, 2010).

Following diagnosis of haemochromatosis and polycythaemia, the treatment of choice is venesection. Venesection is the quickest and simplest way of reducing the number of red blood cells in the blood. It involves the insertion of a wide bore needle into the brachial vein to remove an amount blood in accordance with predetermined guidelines (see appendix 3). The removal of blood can also be performed via a central venous access device (CVAD) for identified patients with poor venous access.

Once a diagnosis of haemochromatosis/polycythaemia is established, the patient requires lifelong follow up which includes frequent visits to the hospital. Patients will be referred to Ward 621 for the first isovolaemic venesection to be undertaken by a registered nurse, to ensure the patient has no adverse reactions (such as hypotension). If no problems occur the patient can be referred to the haematology outpatients department where all subsequent procedures can be undertaken by a competent registered or non-registered nurse.

The procedure of venesection within the haematology outpatient department/ward 621 provides a responsive and patient led service thus meeting the needs of this cohort of patients. Patients with haemochromatosis generally require venesection every 3 months. Patients with various forms of polycythaemia will require venesection on an ad hoc basis according to their haematocrit and presence of symptoms.

The nursing staff in the haematology outpatient department have been performing venesection procedures for several years and have been providing a safe and efficient service that relieves some of the workload on ward 621. The service is highly appreciated by patients as they have found this service to be flexible and more convenient to their routine.

A review of the expanded practice protocol has been undertaken to ensure the practice covered by this document remains up to date. As part of this review, an audit was performed (O'Dwyer/Hicks, 2017), which has confirmed that the expanded practice protocol has been adhered to. No significant changes to the protocol have been made.

CONSENT

Although formal written consent is not required for minor procedures, verbal consent for the venesection procedure must be obtained where possible and this must be documented on the Prescribing Information and Communication System (PICS). For further information regarding consent and mental capacity please refer to the following documents:

- Department of Health Reference Guide to Consent for Examination or Treatment (2009).
- The Trust's Policy and Procedural document for consent to examination or treatment (current version).
- *Mental Capacity Act (2005).*

INDICATIONS

1. The patient with a medical diagnosis of hereditary haemochromatosis or polycythaemia requiring venesection, who has been identified by a consultant or registrar haematology physician as suitable for treatment in the haematology outpatient department/ward 621. This must have been documented on PICS or in the patient's records.

2. **For patients with haemochromatosis**, the patient's ferritin level and transferrin saturation must have been obtained and documented on PICS. This must be checked by a registered nurse working in either the haematology outpatient department or ward 621 immediately prior to the performance of venesection.

3. **For patients with polycythaemia**, the criteria for venesection are the haematocrit value and accompanying symptoms, and not the ferritin level. In this instance the haematocrit level must have been documented on PICS and this must be checked by a registered nurse working in either the haematology outpatient department or ward 621 immediately prior to the performance of venesection.

4. **All patients must receive their first venesection procedure on ward 621**. The patient must then receive subsequent venesections in the haematology outpatient department unless the patient experiences any adverse side effects during their first venesection procedure; for example see Appendix 3. In this instance the patient will continue to receive all subsequent venesections on ward 621.

5. Prior to the commencement of the treatment, the patient must have been fully informed about venesection and this must be documented on PICS. New patients must receive the haemochromatosis/polycythaemia information leaflet.

6. Where venesection is being undertaken by a non-registered nurse, the patient must be reviewed by a registered nurse before the performance of each venesection.

7. There must be a consultant haematology physician/specialist registrar immediately available within the haematology outpatient department.

CONTRAINDICATIONS

The registered / non-registered nurse must not perform venesection and must refer the patient immediately to the consultant haematology physician, in the following circumstances:

1. The patient has capacity and does not give consent for venesection.
2. The patient shows signs of unstable cardiovascular function compared to previous baseline observations.
3. The patient is under 16 years of age.
4. There is no consultant haematology physician/specialist registrar immediately available within the haematology outpatient department.

LIMITATIONS TO PRACTICE

1. The patient has scarred or friable veins due to previous venesection. The registered/non-registered nurse must refer the patient to a medical clinician to site a butterfly cannula.

2. The patient should aim to have had at least 1 litre to drink and something to eat prior to venesection. If the patient has not achieved this the registered nurse must discuss this with the haematology consultant before commencing the venesection procedure.

3. The patient with a haemoglobin level that is lower than normal range may need to be discussed with the consultant haematology physician/specialist registrar prior to venesection and a treatment plan must be documented in the patient's records.

4. If the patient presents with any of the following as a new issue they must be referred to the consultant haematology physician/registrar prior to venesection:

    - The patient has had previous problems with venesection
    - The patient bruises easily
    - The patient has fainted in the past in association with venesection
    - The patient has previously manifested the symptoms of hypovolaemic shock during venesection
    - The patient weighs less than 49 kilograms in weight
    - The patient is menstruating
    - The patient is known to be pregnant

5. Venesection may still be appropriate if the ferritin is in the low normal range. In this instance the registered nurse must discuss this with the haematology consultant first.

6. Venesections via a CVAD must only be performed by a registered nurse and must not be delegated to a non-registered nurse.

7. If the registered nurse has any concerns about the patient's condition they must immediately refer the patient to the appropriate consultant haematology physician who will advise on any further action to be taken. This must be documented in the patient's records.

The appropriate Health and Safety risk assessments must have been completed for the clinical area.

CRITERIA FOR COMPETENCE

1. Registered nurses working within the haematology outpatient department/ward 621. The registered nurse must have undertaken training recognised by the Matron for haematology.

2. Non-registered nurses working within haematology outpatient department/ward 621. The non-registered nurse must have been identified to undertake this role by their line manager and matron and must have undertaken education and training provided by a registered practitioner already competent in the performance of venesection.

3. The registered/non-registered nurse must provide evidence of competence in the performance of phlebotomy in accordance with expanded practice protocol controlled document number 243 (current version).

4. The registered nurse must provide evidence of competence in the care of central venous access devices (CVAD's) in accordance with the Guidelines for the Care of Central Venous Access Devices (CVADs) controlled document number CG042 (current version).

5. The registered/non-registered nurse must be familiar with, and adhere to, the guidelines for the practice of venesection (Appendix 3).

6. Evidence of satisfactory supervised practice must be provided by the registered/non-registered nurse as witnessed by a registered practitioner who is already competent in venesection for the treatment of patients with haemochromatosis/polycythaemia (Appendix 1).

7. The number of supervised practices required will reflect the individual registered/non-registered nurse's learning needs.

8. Evidence of competence in the practice of venesection must be provided as witnessed by a practitioner already competent in the performance of venesection. A copy must be kept in the registered/non-registered nurse's personal file and in the department where the skill is practised (Appendix 2). Following each review and update of the protocol the registered/non-registered nurse has a responsibility to ensure that there is evidence that

they have read and familiarised themselves with the current version of the protocol.

9. Registered/non-registered nurses new to the Trust, who have been performing the skill elsewhere, must read, understand and be signed off against this protocol. Evidence of appropriate education and competence must be provided and checked by the line manager before undertaking this expanded practice at the Trust. The decision whether the registered/non-registered nurse needs to complete Trust training and competence will be at the discretion of the registered / non-registered nurse's line manager.

10. In accordance with codes of professional practice, the registered nurse has a responsibility to recognise, and to work within, the limits of their competence. In addition, the registered nurse has a responsibility to practise within the boundaries of the current evidence based practice and in line with up to date Trust and national policies and procedural documents.

11. Evidence of continuing professional development and maintenance of skill level will be required and confirmed at the registered/non-registered nurse's annual appraisal by the registered/non-registered nurse's line manager.

12. The registered nurse, when delegating the procedure of venesection to the non-registered nurse, must undertake the following actions:
    - Establish that the non-registered nurse, to whom the registered nurse has delegated the venesection, is able to carry out this procedure.
    - Confirm that the outcome of the delegated venesection meets the required standards.
    - Ensure that the non-registered nurse is supervised and supported as necessary by the registered nurse.

A list of registered/non-registered nurses competent to perform this skill must be kept by the line manager and in the clinical area where the venesections are performed.

PROTOCOL AND SKILLS AUDIT

A registered nurse in the haematology outpatient department/ward 621 will be identified to lead the audit of the protocol with support from the Practice Development Team. The audit will be undertaken in accordance with the review date and will include:

- Adherence to the protocol
- Any untoward incidents or complaints arising from venesection procedures undertaken in the haematology outpatient department and on ward 621.
- Number of registered and non-registered nurses competent to perform venesection.

- Patient experience feedback.

All audits must be logged with the Risk and Compliance Unit using the Clinical Audit Registration and Management System (CARMS).

CLINICAL INCIDENT REPORTING AND MANAGEMENT

Any untoward incidents and near misses must be reported via the Trust incident reporting system, and where required escalated to the appropriate management team. In addition, the Risk and Compliance Unit must be notified by telephone of any Serious Incidents (SI).

REFERENCES

Department of Health (2009) **Reference Guide to Consent for Examination or Treatment** 2nd edn. HMSO, London

Mental Capacity Act 2005, http://www.legislation.gov.uk/ukpga/2005/9/contents [accessed 30.12.2016]

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O'Dwyer, J. Hicks, P. (2017) Audit of CP **No: 859 Expanded Practice Protocol for the Performance of Venesection in the Haematology Outpatient Department/Ward 621 for the Treatment of Patients with Haemochromatosis and Polycythaemia** University Hospitals Birmingham NHS Trust. Unpublished. Ref. CARMS 13312

University Hospitals Birmingham NHS Foundation Trust (current version) **Policy for consent to examination or treatment**, University Hospitals Birmingham NHS Foundation Trust http://uhbpolicies/Microsites/Policies_Procedures/consent-to-examination-or-treatment.htm [accessed 30.12.2016].

University Hospitals Birmingham NHS Foundation Trust (current version) **Procedure for consent to examination or treatment**. University Hospitals Birmingham NHS Foundation Trust http://uhbpolicies/Microsites/Policies_Procedures/consent-to-examination-or-treatment.htm [accessed 30.12.2016].

University Hospitals Birmingham NHS Foundation Trust (current version) **Controlled document no. 243: Expanded practice protocol for the performance of phlebotomy**. University Hospitals Birmingham NHS Foundation Trust.

University Hospitals Birmingham NHS Foundation Trust (current version) **Controlled document no. CG042: Guidelines for the Care of Central Venous Access Devices (CVADs)**. http://uhbpolicies/assets/CvadGuidelines.pdf [accessed 26.01.2017]

University Hospitals Birmingham NHS Foundation Trust (current version) **Standards for Working with Carers**, University Hospitals Birmingham NHS Foundation Trust http://uhbhome/Microsites/Policies_Procedures/working-with-carers.htm [accessed 30.12.2016].

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University Hospitals Birmingham NHS Foundation Trust Risk Assessment Documentation http://uhbhome/Resources/RiskAssessmentDocs/Home.aspx (Accessed 30.12.2016).

PROTOCOL SUBMISSION DETAILS

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Protocol submitted to and approved by:

Executive Chief Nurse .....

Date: 17/05/2017

Executive Medical Director
(or nominated Deputy Medical Director) .....

Date: .....

Associate Director of Nursing, Division D .....

Date: 20/3/2017

Matron Haematology .....

Date: 20/03/17

Clinical Service Lead, Haematology .....

Date: 04/05/2017

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EVIDENCE OF SUPERVISED PRACTICE

To become a competent practitioner, it is the responsibility of each registered/non registered nurse to undertake supervised practice in order to **perform venesection in the haematology outpatient department/ward 621 for the treatment of patients with haemochromatosis and polycythaemia** in a safe and skilled manner.

Name of Registered/Non-registered Nurse: …….

DATE	DETAILS OF PROCEDURE	SATISFACTORY STANDARD MET	COMMENTS	PRINT NAME, SIGNATURE & DESIGNATION
		Yes / No		
		Yes / No		
		Yes / No		
		Yes / No		
		Yes / No		
		Yes / No		

END COMPETENCE: To undertake venesection in haematology outpatient department/ward 621 for the treatment of patients with haemochromatosis and polycythaemia

Date(s) of education and supervised practice:…….
Name of registered/non-registered nurse (print): …….
Name of supervisor (print): ……. Designation: ……..

ELEMENT OF COMPETENCE TO BE ACHIEVED	Date Achieved	Registered/non-registered Nurse Sign	Supervisor Sign
Correctly define the term 'haemochromatosis'.			
Correctly define the term 'polycythaemia'.			
Correctly define the term 'venesection'.			
Discuss and demonstrate understanding of the: • Indications • Contraindications • Limitations to practice for the performance of venesection for patients with haemochromatosis/polycythaemia according to this expanded practice protocol.			
Provide evidence of competence in the performance of phlebotomy in accordance with expanded practice protocol controlled document number 243 (current version).			
For Registered Nurses Only: Provide evidence of competence in the care of central venous access devices (CVADs) in accordance with the Guidelines for the care of central venous access devices (CVADs) controlled document number CG 042 (current version)			
Demonstrate safe infection prevention and control practices throughout the procedure. To include: • Standard precautions • Aseptic non touch technique			
Demonstrate knowledge and understanding of the guidelines for the practice of venesection (Appendix 4).			

ELEMENT OF COMPETENCE TO BE ACHIEVED	Date Achieved	Registered/non-registered Nurse Sign	Supervisor Sign
Demonstrate knowledge of, and discuss the importance of patient assessment in relation to the treatment plan (refer to guidelines in Appendix 3).			
Demonstrate knowledge of the normal ranges for Haemoglobin level.			
For registered nurses only - Identify and discuss the most appropriate treatment for haemochromatosis.			
For registered nurses only – Demonstrate knowledge of the normal ranges for following blood results: • Haematocrit level • Ferritin level • Transferrin Saturation			
Correctly state and demonstrate understanding of the rationale for the maximum volume of blood to be removed from a patient during one venesection procedure (see appendix 3).			
Discuss methods of minimising the health and safety hazards encountered during the handling of blood.			
Demonstrate accurate provision of information pre, during and post the procedure in a way that the patient understands.			
Demonstrate involvement of the patient and their families/carers, in decision making about their care and treatment.			
Demonstrate application of the Trust standards for working with carers.			
Demonstrate maintenance of the patient's privacy and dignity throughout the procedure.			
Correctly identify the potential complications of venesection. How to prevent them …And actions to take if they do occur			
Discuss the signs and symptoms of hypovolaemia and correctly identify the action to be taken when it occurs: a) If registered nurse b) If non-registered nurse			

ELEMENT OF COMPETENCE TO BE ACHIEVED	Date Achieved	Registered Nurse Sign	Supervisor Sign
Discuss the signs and symptoms of mechanical phlebitis and correctly identify the action to be taken when it occurs.			
Demonstrate a working knowledge of Trust policy for consent to examination or treatment.			
Demonstrate a working knowledge of the *Mental Capacity Act 2005*.			
Demonstrate accurate record keeping.			
Discuss any health and safety issues in relation to this expanded practice			
Demonstrate an understanding of the incident reporting process.			
For registered nurses only: Demonstrate a working knowledge of the NMC Code: Professional standards of practice and behaviour for nurses and midwives (2015).			

I declare that I have expanded my knowledge and skills and undertake to practice with accountability for my decisions and actions.
I have read and understood the protocol for the **Performance of Venesection in the Haematology Outpatient Department/Ward 621 for the Treatment of Patients with Haemochromatosis and Polycythaemia.**

Signature of Registered/non-registered Nurse: …….Print name:……..…
Date: ……

I declare that I have supervised this registered/non-registered nurse and found her/him to be competent as judged by the above criteria.

Signature of Supervisor: …….. Print name:…….
Designation:……Date: ……..

A copy of this record must be placed in the registered/non-registered nurse's personal file, a copy must be stored in the clinical area by the line manager and a copy can be retained by the individual for their Professional Portfolio.

Guidelines for the Practice of Venesection

NB All interventions and treatments must be documented in the patient's medical records

1. Pre procedure

- All patients attending haematology outpatient department/ward 621 must be identified as suitable by a consultant haematology physician and this must be recorded on PICS.
- At each clinic attendance, the patient must have baseline blood pressure, pulse and weight documented.
- For patients under 49 kilograms the volume of blood to be removed must be decided and have been documented in the patient's records by the Consultant/Registrar Haematology Physician.

Ask the patient the following questions∗:

1. How are you feeling today?
2. Have you had something to eat and drink (at least 1 litre of fluid)?
3. Have you had any previous problems with venesection?
4. Do you bruise easily?
5. Have you ever fainted during venesection?
6. Have you ever suffered from dizzy spells prior to, during, or after any previous venesections before?

∗If patients state they are not in good health or answer YES to questions 4 and 5, consider replacing the removed blood volume with suitable intravenous fluids.

- In this instance the non-registered nurse must refer the patient either to the registered nurse or haematology physician for further assessment.
- If the patient does require intravenous fluids, these must be prescribed on PICS by a haematology physician and the patient must be referred to Ward 621 for any subsequent venesections.

NB: Please check the flow diagram (appendix 1-3) for guidance on continued procedures/treatment. If the registered/non-registered nurse has any specific concerns she/he must seek medical advice immediately.

2. Procedure using a venesection needle

1. Check the patient's name, date of birth and address to confirm identity.
2. Explain the procedure to the patient and obtain verbal consent.
3. Ensure adherence to infection prevention and control practices throughout the procedure, including adherence to Trust aseptic non touch technique (ANTT) procedures.
4. Clean the site for the insertion of the venesection needle with an alcohol impregnated pre-injection swab (2% chlorhexidine in 70% isopropyl alcohol).
5. Allow to air dry.
6. Apply tourniquet to the upper arm.
7. Check the venesection needle cover to confirm the seal is intact.

8. Remove the protective needle cap and inspect the needle for damage, nicks, bends or barbs.
9. Ensure the vein is fixed. Insert the needle with the bevel facing upwards through the skin immediately below or alongside the vein. When the bevel of the needle is fully under the skin insert into the vein.
10. Check that the blood is flowing into the line. If excessively fast or bright red, suggesting arterial puncture, stop the venesection - apply pressure to site for 5 mins.
11. If no blood is obtained in the line or initial flow is so slow that venesection cannot proceed, stop the venesection and take it down.
12. Re-attempt venesection on the other arm with new equipment providing there is a suitable vein and the patient provides verbal consent.
13. When venesection needle is correctly placed, ensure the line is taped securely to the patient's arm, to ensure no movement of the needle, and gradually release the pressure of the tourniquet until good blood flow is maintained. Ensure patient comfort and explain to keep arm still where possible to avoid needle displacement
14. Check the venepuncture site for bruising and make sure the patient is comfortable. If bruising occurs, the registered/non-registered nurse must immediately inform the haematology physician in the department. This must be documented in the patient's records.
15. During the procedure, the patient's pulse and blood pressure must be recorded at 5 minute intervals.
16. **The patient must be observed throughout the whole procedure.**

3. Bleed Volume

The target bleed volume for all patients should be 470mls (405mls-500mls is acceptable) unless otherwise stated by the patient's medical consultant.

4. Adjustment of venesection needle:

- If the flow of blood has slowed or has been observed to stop, a single adjustment to the needle is permitted.
- To complete needle adjustment, either rotate the needle or partially withdraw it, but do not advance the needle.

5. Post Procedure

1. Once the target blood volume has been achieved and blood samples taken, the venesection needle must be removed.
2. Once the venesection needle has been removed, apply pressure to the venesection site to stop bleeding and to prevent bruising. Once the site is dry and there is no obvious oozing, apply a firm dressing.
3. Dispose of equipment and blood in accordance with the Trust's Infection Prevention and Control Policy and procedures.
4. Recheck pulse and blood pressure post procedure and if satisfactory, discharge the patient following light refreshment and a 5 - 10 minute rest period.
5. Ensure the patient has instructions on how to care for the needle site and what actions to take if they become unwell.
6. Ensure the patient has a drink prior to leaving the clinic.
7. Document the procedure in the patent's records and make the next appointment if required.

6. Potential Complications

- **Hypovolaemia**

NB: If the patient becomes hypotensive and/or tachycardic; stop the venesection immediately.

Nursing Intervention:

1. If venesection has been delegated to a non-registered nurse: **the non-registered nurse must inform the registered nurse immediately.**
2. Lay the patient flat with legs elevated if necessary.
3. Recheck pulse and blood pressure frequently (every 5 minutes) whilst the patient recovers.
4. Allow patient time to recover from hypotension, offer oral fluids and reassurance.
5. If the patient is still hypotensive after 45 minutes, and administration of oral fluids, discuss the patient with the haematology physician.
6. If IV fluids are prescribed by the haematology physician, these must be administered by the registered nurse.
7. Discuss with the haematology physician to consider the venesection of a smaller volume of blood (e.g. 250mls) during the current session.
8. Ensure the patient does not travel home alone.

- **Mechanical Phlebitis**

Mechanical phlebitis is associated with poor fixation of the venesection needle, allowing movement within the vessel.

Mechanical damage is the actual tearing away of the endothelial lining.
This can happen during a traumatic insertion, by excessive motion of the venesection needle while in situ or during a traumatic removal.

Nursing intervention:

1. If venesection has been delegated to a non-registered nurse: **the non-registered nurse must inform the registered nurse immediately.**
2. To minimise the risks of phlebitis developing, provide maximum stabilisation of the venesection needle to prevent excessive manipulation and movement of the venesection needle
3. Assess vein prior to venepuncture and avoid placing near a valve or artery.

HAEMOCHROMATOSIS/POLYCYTHAEMIA VERA VENESECTION FLOW DIAGRAM

DIAGNOSIS

DIAGNOSIS OF HAEMOCHROMATOSIS ESTABLISHED BY CONSULTANT

↓

The following information to be documented on PICS:

- FBC
- LFT'S
- Iron indices at presentation
- Ferritin level (target Ferritin is 50 or below)
- Transferrin saturation (serum iron/TIBC)
- Information given re: benefits and complications of venesection
- Information leaflet given

DIAGNOSIS OF POLYCYTHAEMIA VERA ESTABLISHED BY CONSULTANT

↓

The following information to be documented on PICS:

- FBC (haematocrit)

Target haematocrit is below 0.45

A few patients with secondary polycytaemia may be venesected.

Generally these are on a symptomatic basis and will run higher haematocrit values. Discuss with haematologist on an individual basis.

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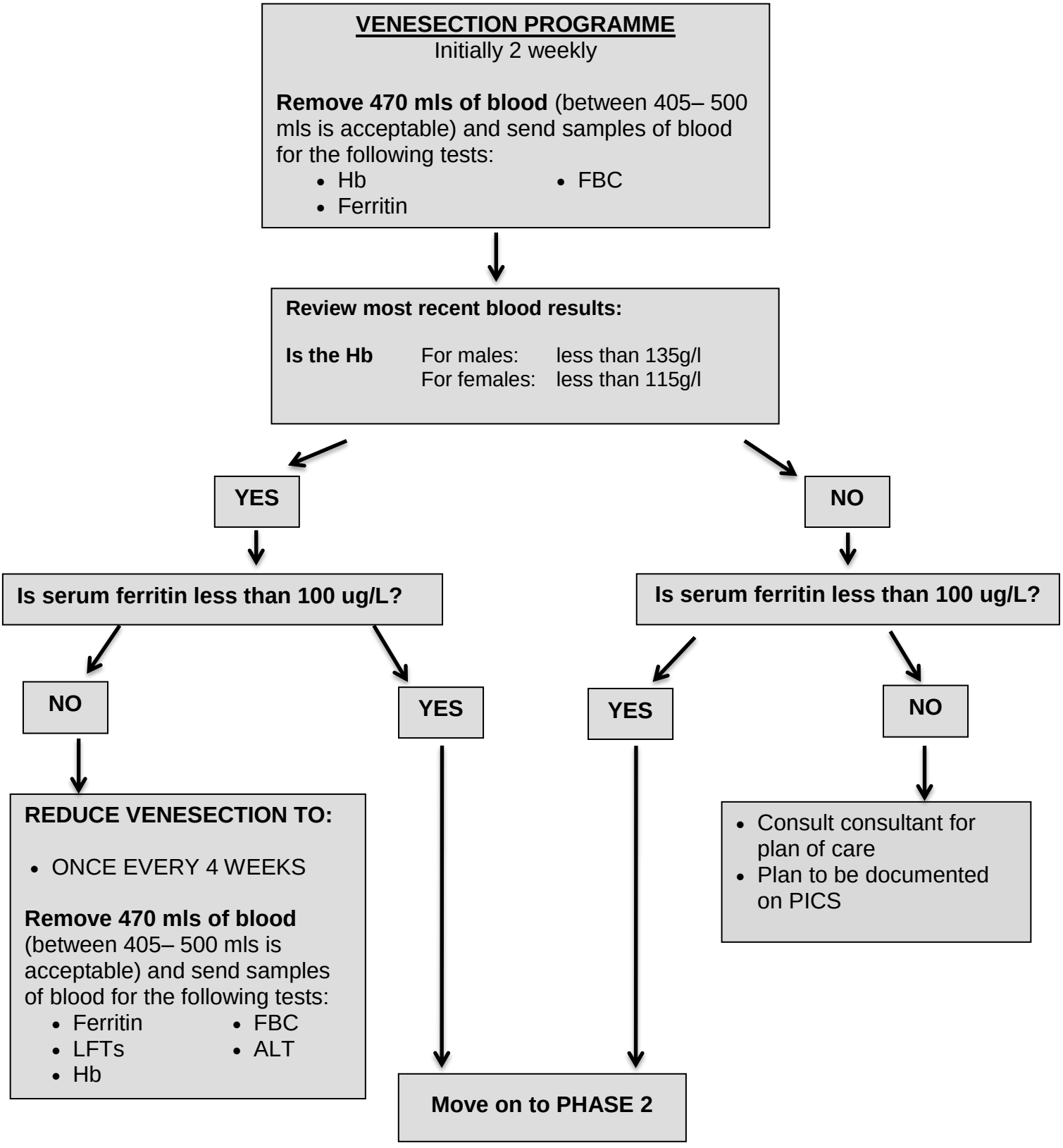
Patient referred to nurse led clinic for:

- Induction venesection undertaken on ward 621 with isovolaemic support
- If no complications post induction venesection, subsequent venesections to be undertaken in haematology outpatients

INDUCTION VENESECTION

Appendix 5

- The aim of Phase 2 is to remove established iron stores.
- Phase 2 may last up to 18 months in heavily iron loaded patients.



MAINTENANCE VENESECTION

PHASE 2: The aim of Phase 2 is to prevent re-accumulation of iron