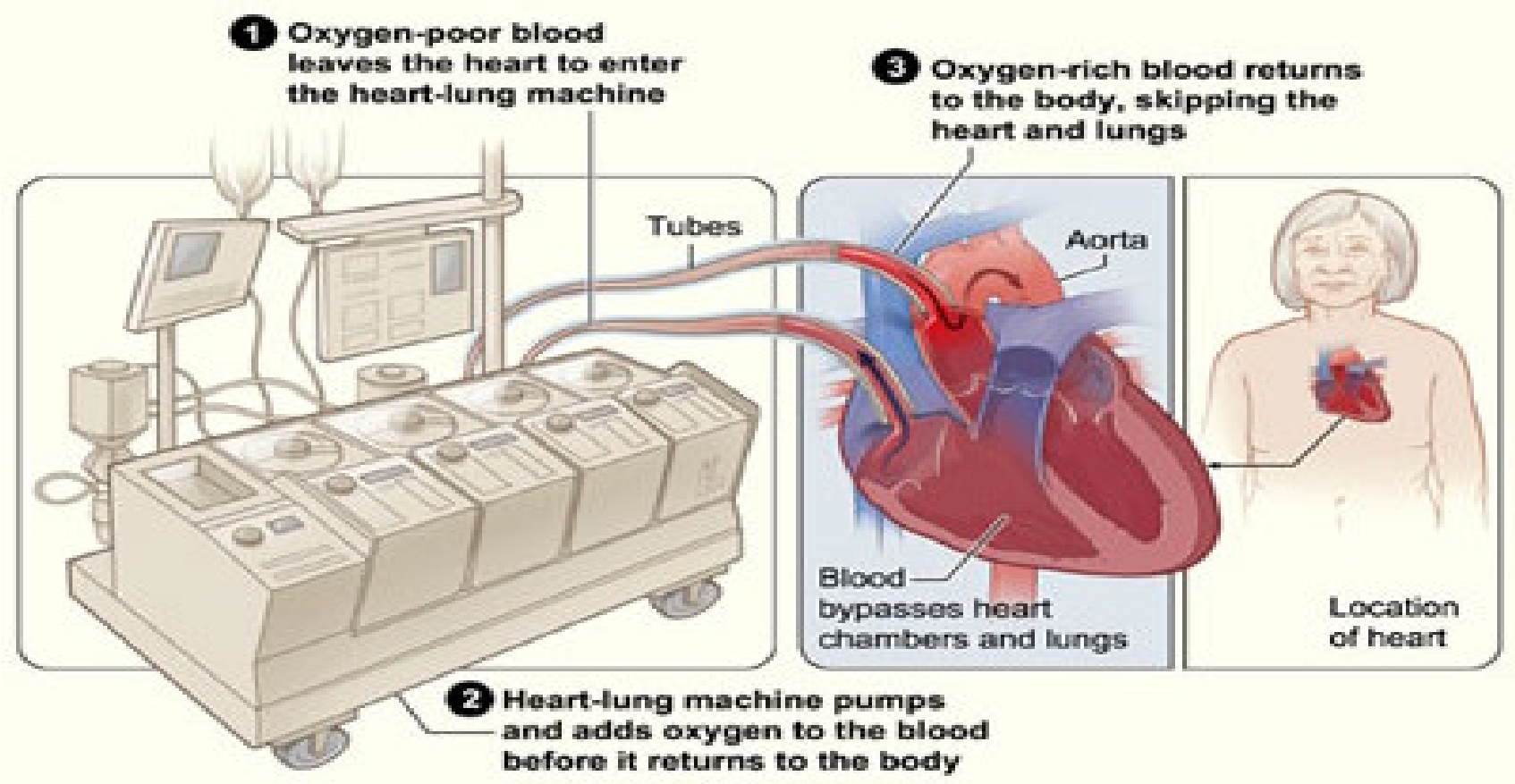
Blackpool Teaching Hospitals NHS
NHS Foundation Trust

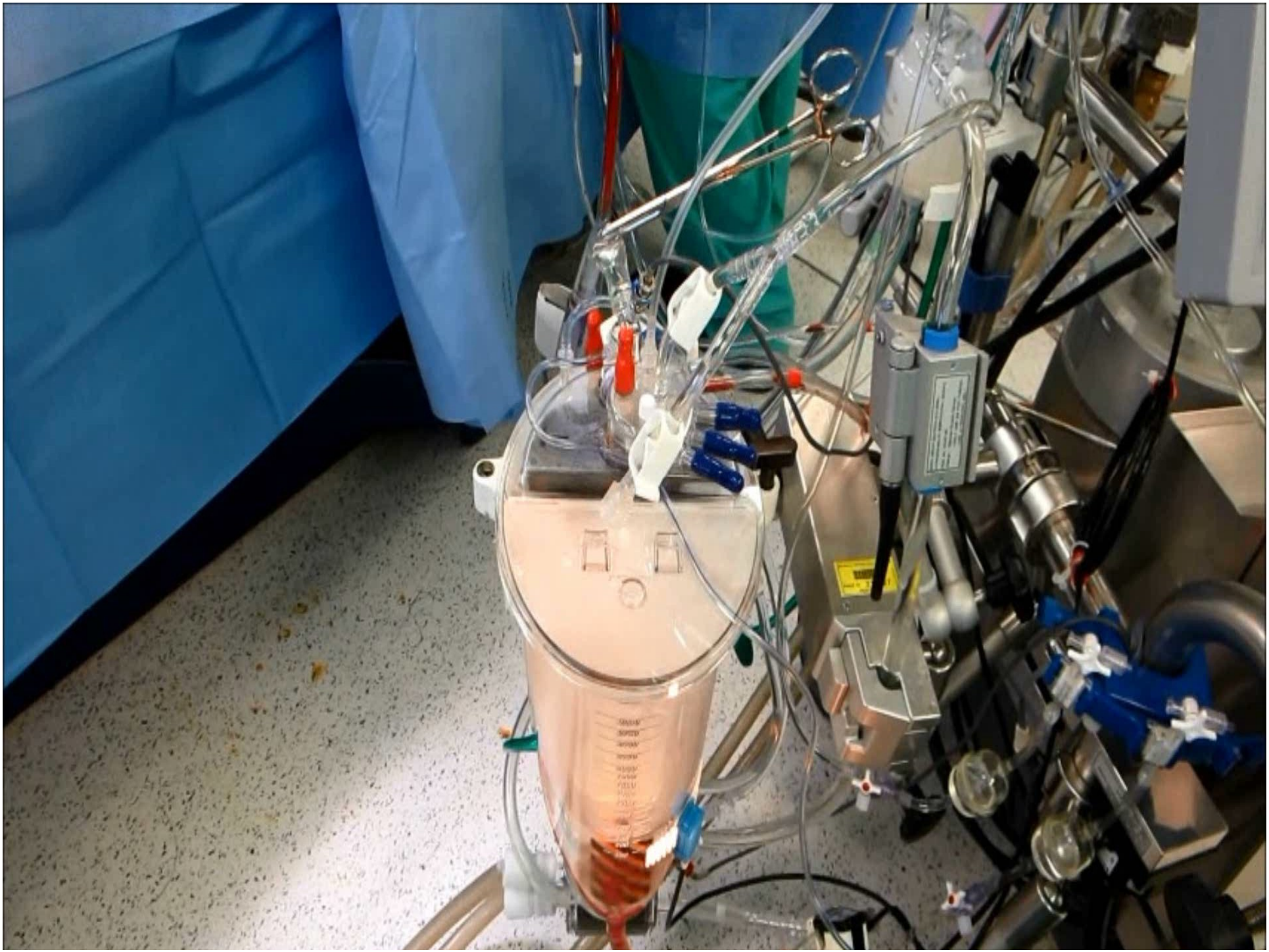
Establishing a pre-op anaemia optimisation pathway for cardiac patients

A nice “little” project?!?!

Erica Bates, Senior Clinical Perfusionist

A Clinical what?





Risks associated with Anaemia

- ↑ mortality & morbidity
- ↑ length of hospital stay
- ↑ risk of a major CVS event within 30 days
- ↑ re-admission rate within 30 days

Practices we currently employ to reduce the need to give blood to a patient in theatre:

- Cell Salvage
- Tranexamic acid/ Aprotinin
- CPB circuit tailored to the patients size
- Autologous priming of the CPB circuit
- Minimal access procedures
- Extensive “point of care blood lab” within the theatre suite which includes:

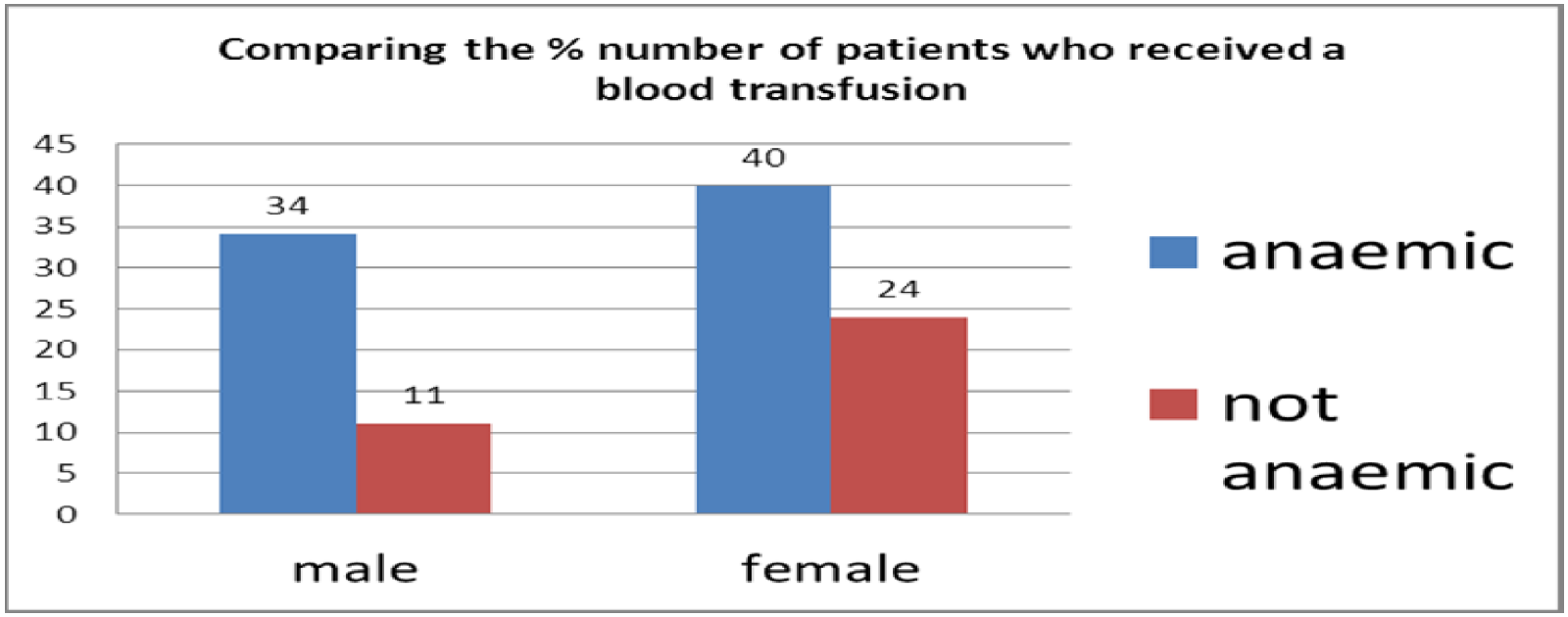
  Heparin Management System
  Platelet Function Machine
  Rotem

Retrospective 6 month Audit

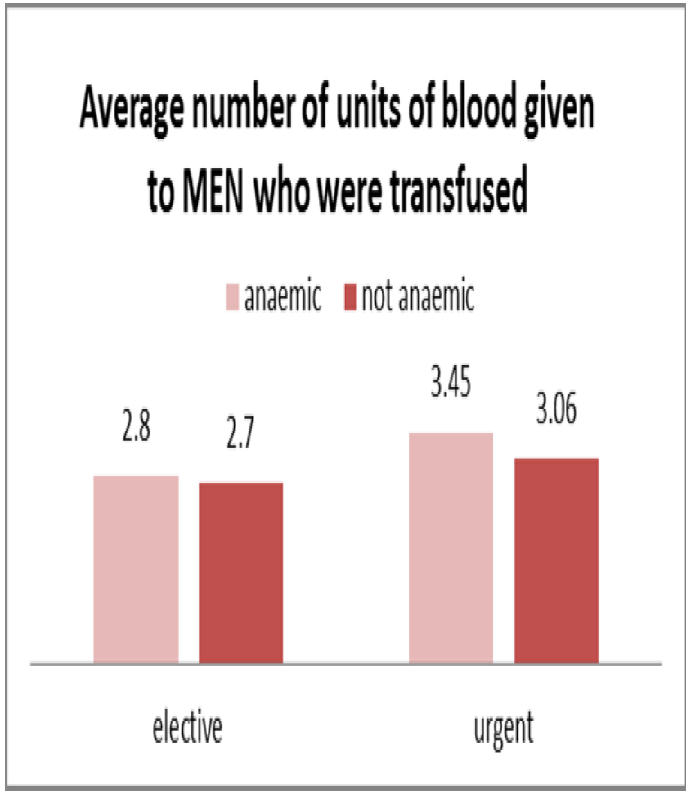
- How many patients were anaemic at the pre – op clinic?
- How many patients were transfused?
- Did these patients receive more bank blood than non anaemic patients ?
- Length of Stay
- WHO anaemia values
  - 12o g/L female and 130 g/L male

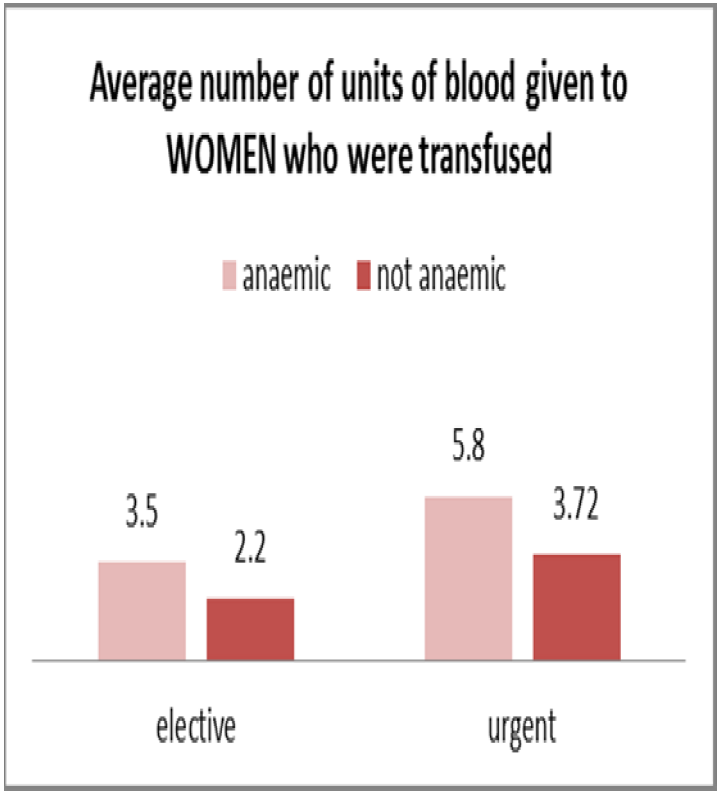
Results:

- N=596 Men = 435 = 73% Women 161 = 27%
- **19.9%** patients received a blood transfusion
- **24.6%** of all patients were anaemic pre-op
- **› 30%** of these anaemic patients received a blood transfusion

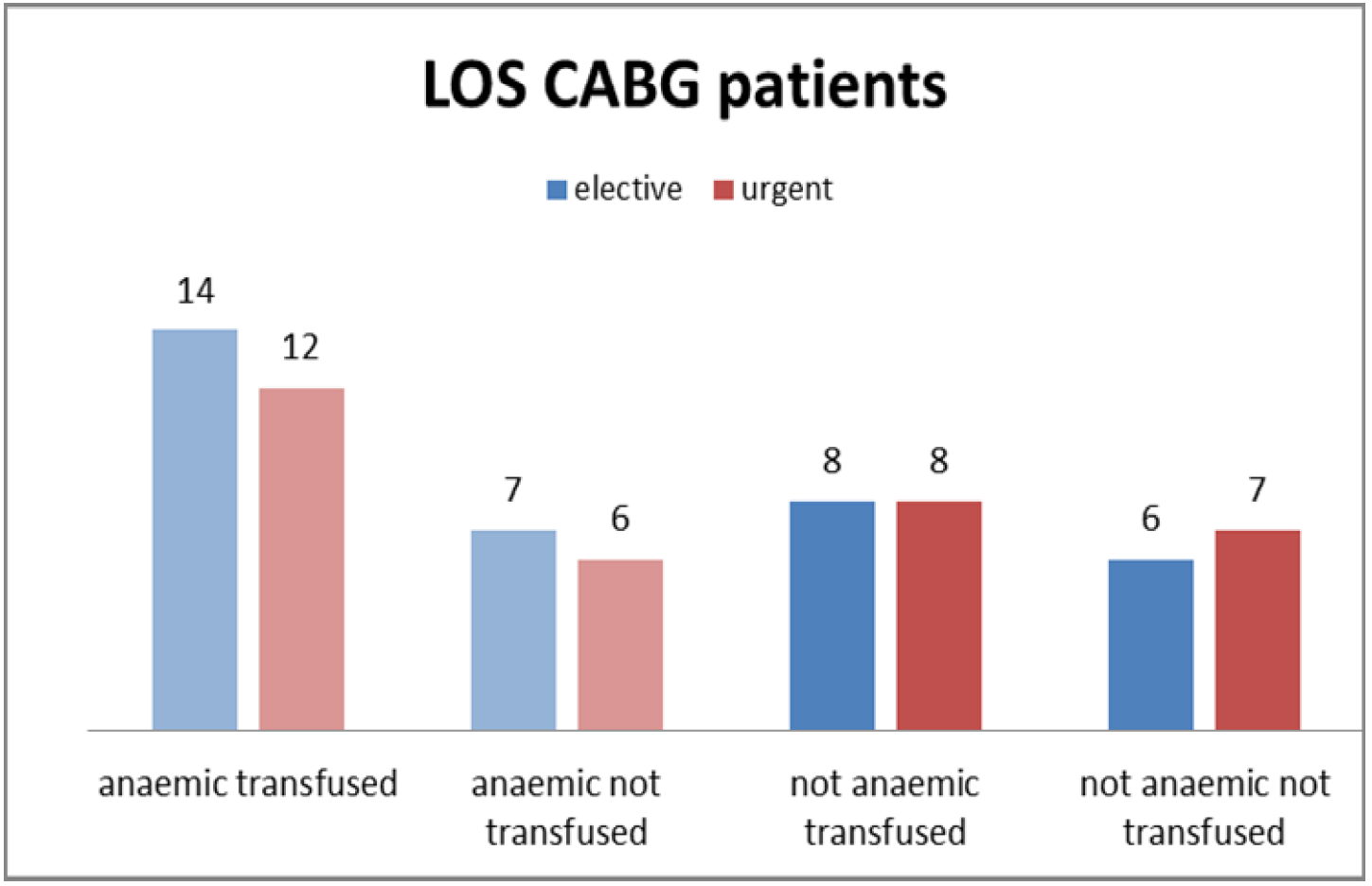


- Anaemic patients received more blood per procedure v's non anaemic patients





- Length of stay was ↑ for all transfused patients but was↑ ↑ ***in anaemic transfused patients***



Surprising find

- Over 30% patients dropped their Hb by > 15 g/L between the pre–op clinic and after induction
- 50% of these became anaemic by this drop
- > 20% of these patients went on to receive blood

Department of Health

Health Service Circular

Series Number:	HSC 2007/001
Gateway Reference:	9058
Issue Date:	November 2007

Better Blood Transfusion

Safe and Appropriate Use of Blood

"Mechanisms should be in place for the pre operative assessment of patients for planned surgical procedures to allow the identification, investigation and treatment of anaemia and the optimisation of haemostasis"

Initial To Do List

- Is there an anaemia pathway currently in place?
- If there is an established pathway why isn't it working?
- Gain agreement in principle from the management team for the anaemia pathway and gather support from pertinent colleagues
- Look at a patients current journey through the hospital
- What would be the best place in the patients journey to start the pathway?
- What obstacles need to be overcome?

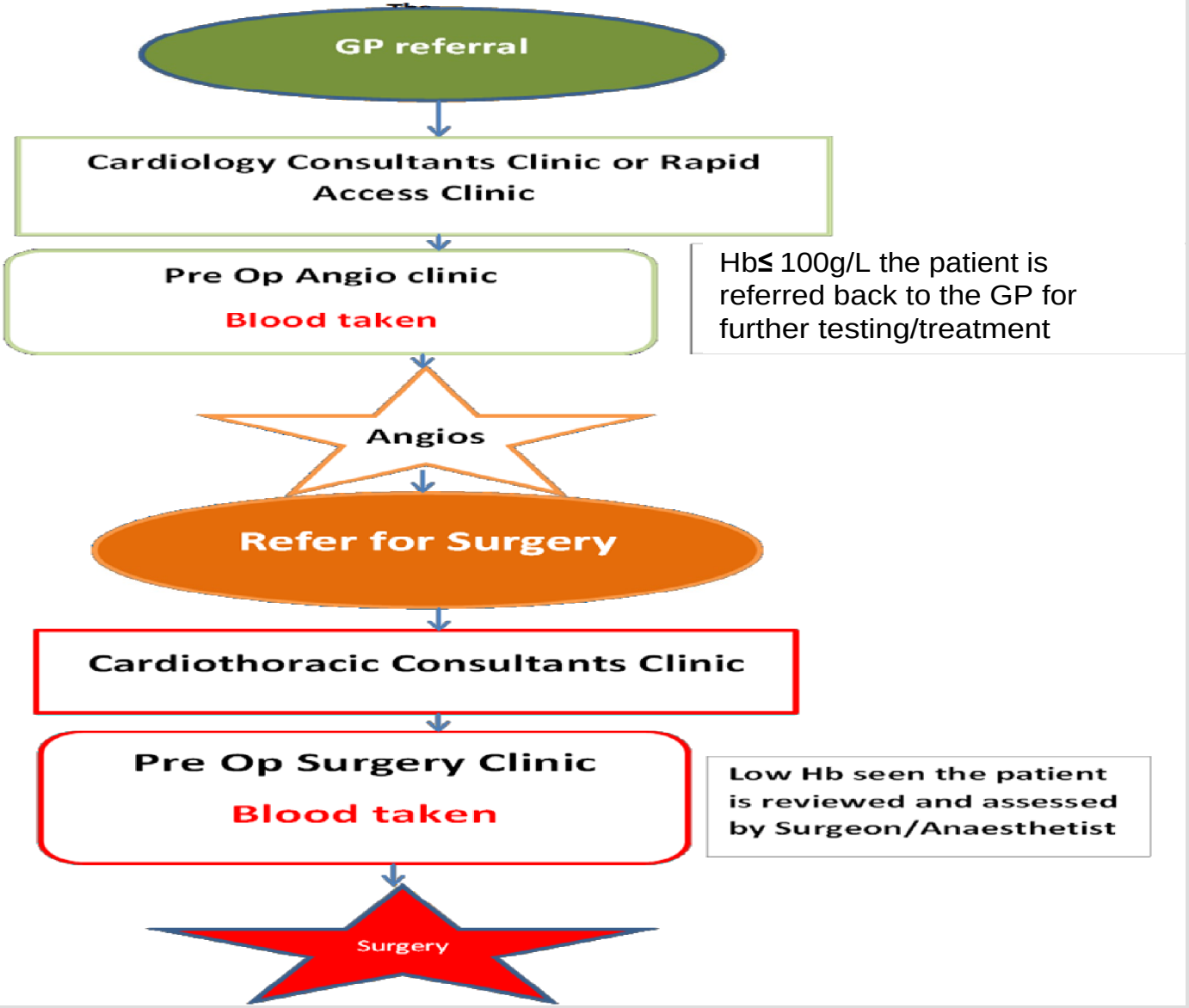
Initial Hurdle

- Cardiac patients are investigated and seen by the Surgeons at outlying hospitals

Raising the following points:

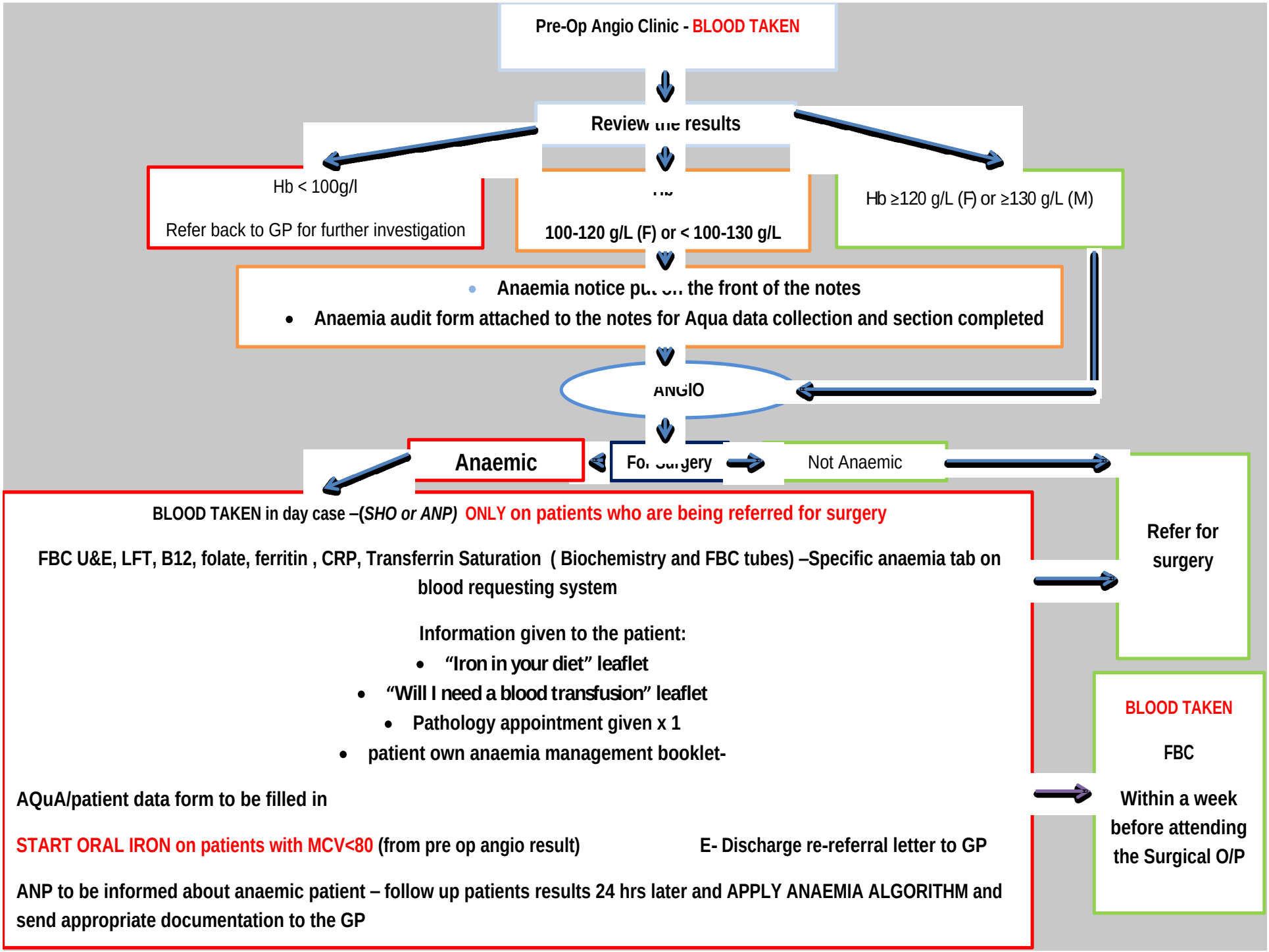
- Should I ask the GPs to investigate and treat the patients before referral?
- GPs spread over a vast geographical area - how would we educate them all?
- Would they engage fully with the project?
- How would we check the pathway was being followed?

Current Pathway for a Cardiac Patient

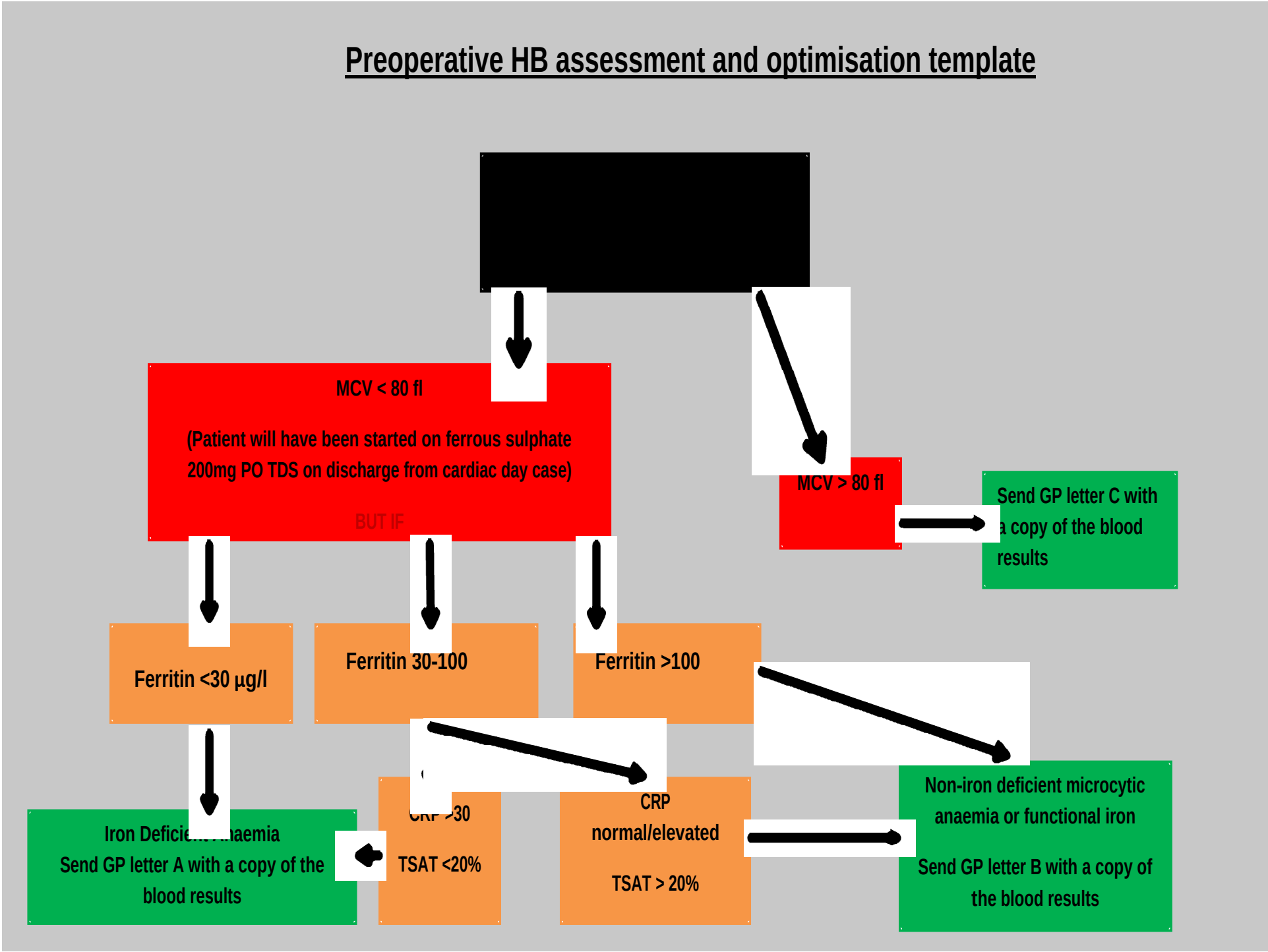


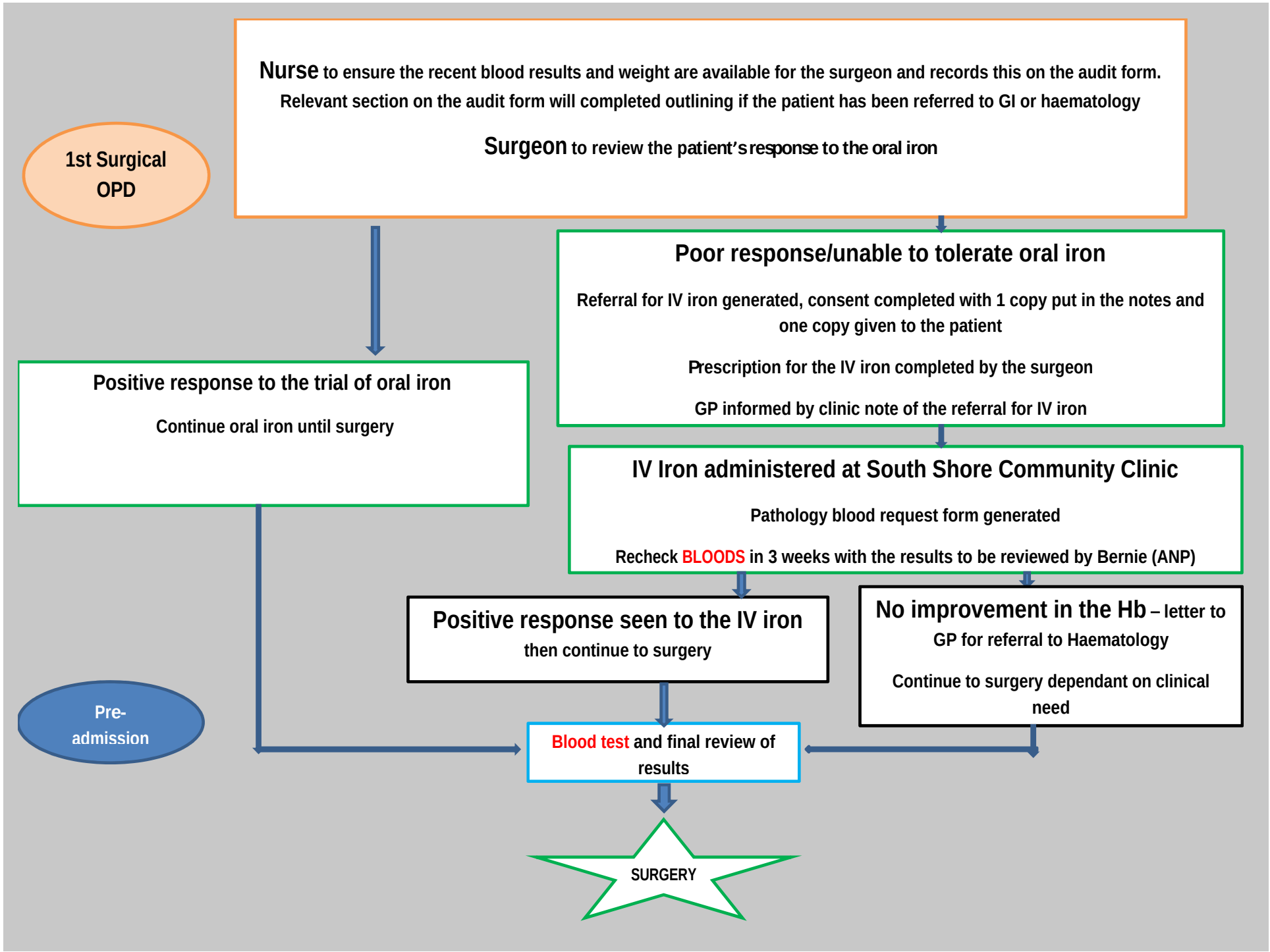
IV Iron

- Is it currently being used in the hospital?
- Which formulation?
- How will we fund the IV iron?
- Where will it be administered?


Pre-Op Angio Clinic - BLOOD TAKEN
Review the results
Hb < 100g/l
Refer back to GP for further investigation
100-120 g/L (F) or < 100-130 g/L
Hb ≥120 g/L (F) or ≥130 g/L (M)
Anaemia notice put on the front of the notes
Anaemia audit form attached to the notes for Aqua data collection and section completed
ANGIO
Anaemic
For surgery
Not Anaemic
BLOOD TAKEN in day case –(SHO or ANP) ONLY on patients who are being referred for surgery
FBC U&E, LFT, B12, folate, ferritin , CRP, Transferrin Saturation (Biochemistry and FBC tubes) –Specific anaemia tab on blood requesting system
Information given to the patient:
"Iron in your diet" leaflet
"Will I need a blood transfusion" leaflet
Pathology appointment given x 1
patient own anaemia management booklet-
AQuA/patient data form to be filled in
START ORAL IRON on patients with MCV<80 (from pre op angio result)
E- Discharge re-referral letter to GP
ANP to be informed about anaemic patient – follow up patients results 24 hrs later and APPLY ANAEMIA ALGORITHM and send appropriate documentation to the GP
Refer for surgery
BLOOD TAKEN
FBC
Within a week before attending the Surgical O/P

Preoperative HB assessment and optimisation template




1st Surgical OPD
Nurse to ensure the recent blood results and weight are available for the surgeon and records this on the audit form.
Relevant section on the audit form will completed outlining if the patient has been referred to GI or haematology
Surgeon to review the patient's response to the oral iron
Poor response/unable to tolerate oral iron
Referral for IV iron generated, consent completed with 1 copy put in the notes and one copy given to the patient
Prescription for the IV iron completed by the surgeon
GP informed by clinic note of the referral for IV iron
Positive response to the trial of oral iron
Continue oral iron until surgery
IV Iron administered at South Shore Community Clinic
Pathology blood request form generated
Recheck BLOODS in 3 weeks with the results to be reviewed by Bernie (ANP)
Positive response seen to the IV iron
then continue to surgery
No improvement in the Hb – letter to GP for referral to Haematology
Continue to surgery dependant on clinical need
Pre-admission
Blood test and final review of results
SURGERY

Data Collection for the Pilot

- **In House**

- to monitor the benefits and any disadvantages of introducing the pathway change

- **AQuA**

- Collect information on the process and outcome measures from all the pilot centres participating in the NW collaborative for optimising pre-op anaemia

Key Stakeholders

- **Patients**
- **Cardiology, Cardiothoracic, Pre admission out patients nurses.**
- **Cardiac day case staff and SHO's**
- **Advanced Nurse Practitioners**
- **GP's**
- **GI department**
- **Haematology**
- **Pathology**
- **Cardio-thoracic surgeons**
- **Community IV clinic**
- **Pharmacology**
- **Finance**
- **PMO**
- **Trust board**

Departments that were made aware of the project:

- Ethics
- Governance
- Audit department
- Service evaluation
- Clinical improvement committee
- Readers panel
- Medicines management
- Hospital transfusion committee

Hurdles we encountered:

- Limited time working within a clinical role to project manage the pathway
- Fear of increased work load from already busy staff
- Finance – whose budget?
- Linking together of different specialities and departments
- Development of the documentation
- Education of all staff before the roll out of the pilot
- Ratification of the documents delaying the start date

Positive outcomes

Before the pilot commenced:

- Strong links have developed between the different specialities/ departments within the Trust and the NW Regional Pre-Op Anaemia Group and AQuA

- Highlighted awareness of anaemia and the potential to optimise the patient before surgery

- Trigger points for transfusion are under discussion

- Single unit transfusion policy

- Co-ordination of blood tests is being looked into - to reduce the need to "bleed" the patient on numerous occasions

Benefits we hope to see after establishing a pre op anaemia optimisation pathway:

- Increased Hb prior to surgery
- Improved patient care and wellbeing
- Reduction in bank blood usage
- Decreased Length of Stay
- Potential cost savings

Has it been worth all the effort?

- YES!!
- The pilot will be starting in January 2015

Core Team

- Erica Bates - Senior Clinical Perfusionist – Cardiothoracic
- Dr Nilu Bhadra - Consultant Anaesthetist - General Surgery
- Dr Chris Rozario – Consultant Cardiothoracic Anaesthetist
- Ms Jenny Lomax – Lead Pharmacist – Surgical Division
- Mr Russell Millner – Divisional Director of Scheduled Care and Cardiothoracic Surgeon
- Ms Jane Meek - Associate Director of Transformation, Scheduled Care Division
- Dr Mark Grey – Consultant Haematologist
- Mr Peter Hudson – Blood Transfusion Clinical Specialist
- Ms Wendy Baines – PMO
- Dr S.Murugesan – Gastroenterology consultant

Thank you