



Avoiding Transfusion – Optimising Haemoglobin

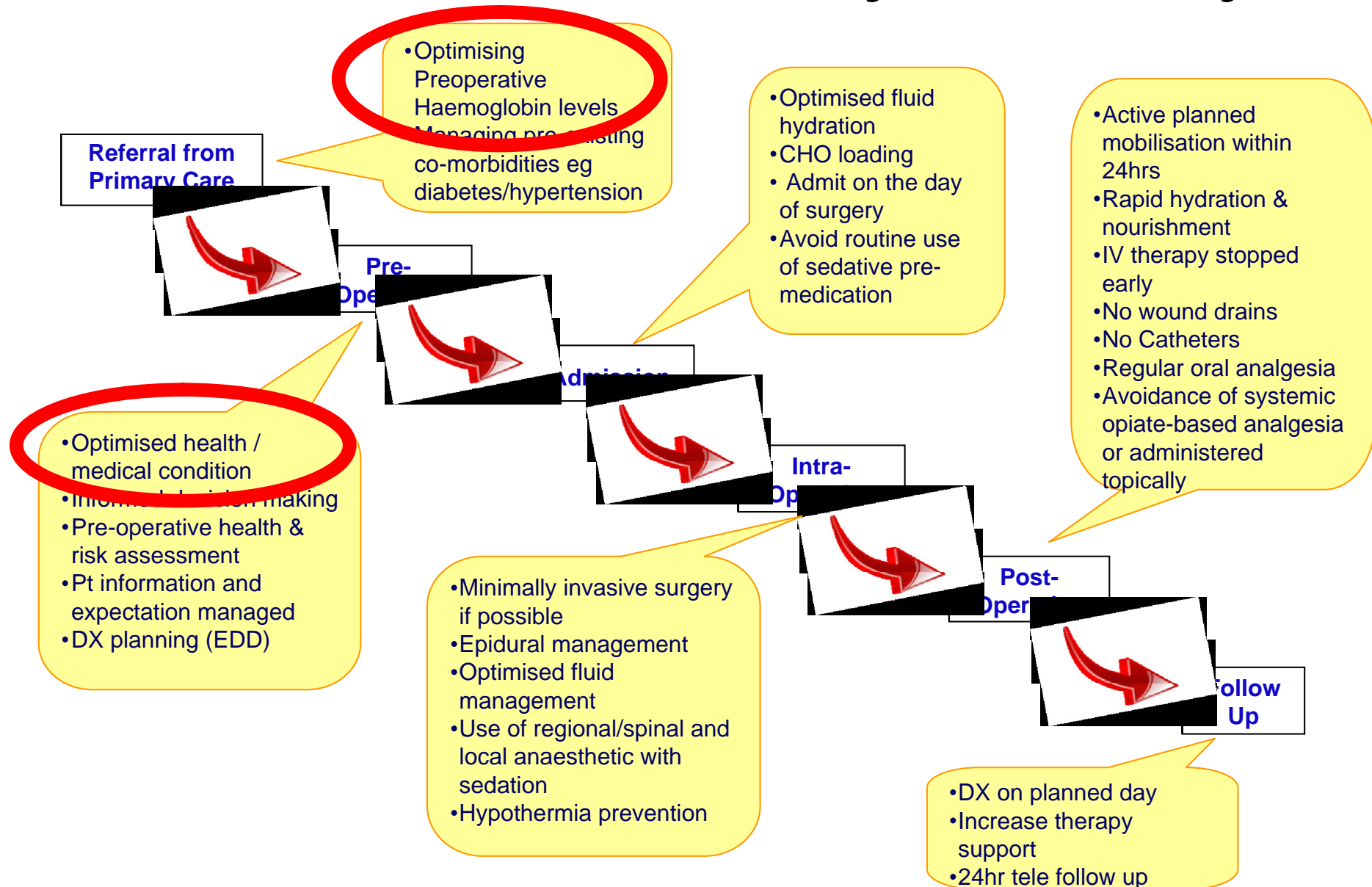
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Why Not Transfuse?

- **Better Blood Transfusion Health Service Circulars - 1998, 2002, 2007** require actions by NHS Trusts to:

‘Avoid the unnecessary use of blood and blood components (fresh frozen plasma and platelets) in medical and surgical practice’

Enhanced Recovery Pathway



What is Anaemia

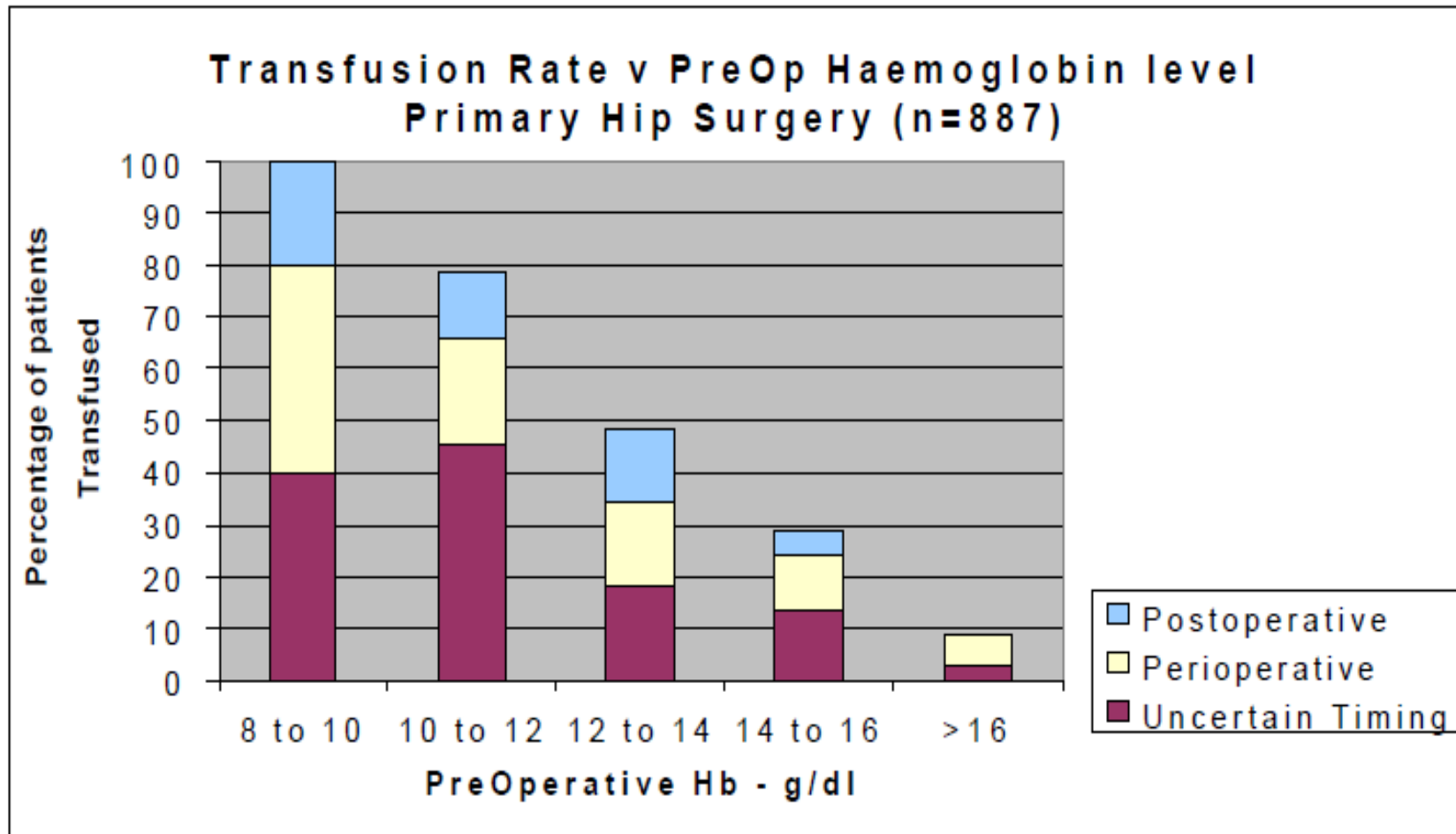
Anaemia is defined as a haemoglobin
less than **120g/L** for females
less than **130g/L** for males

Most anaemia will be due to **iron deficiency**

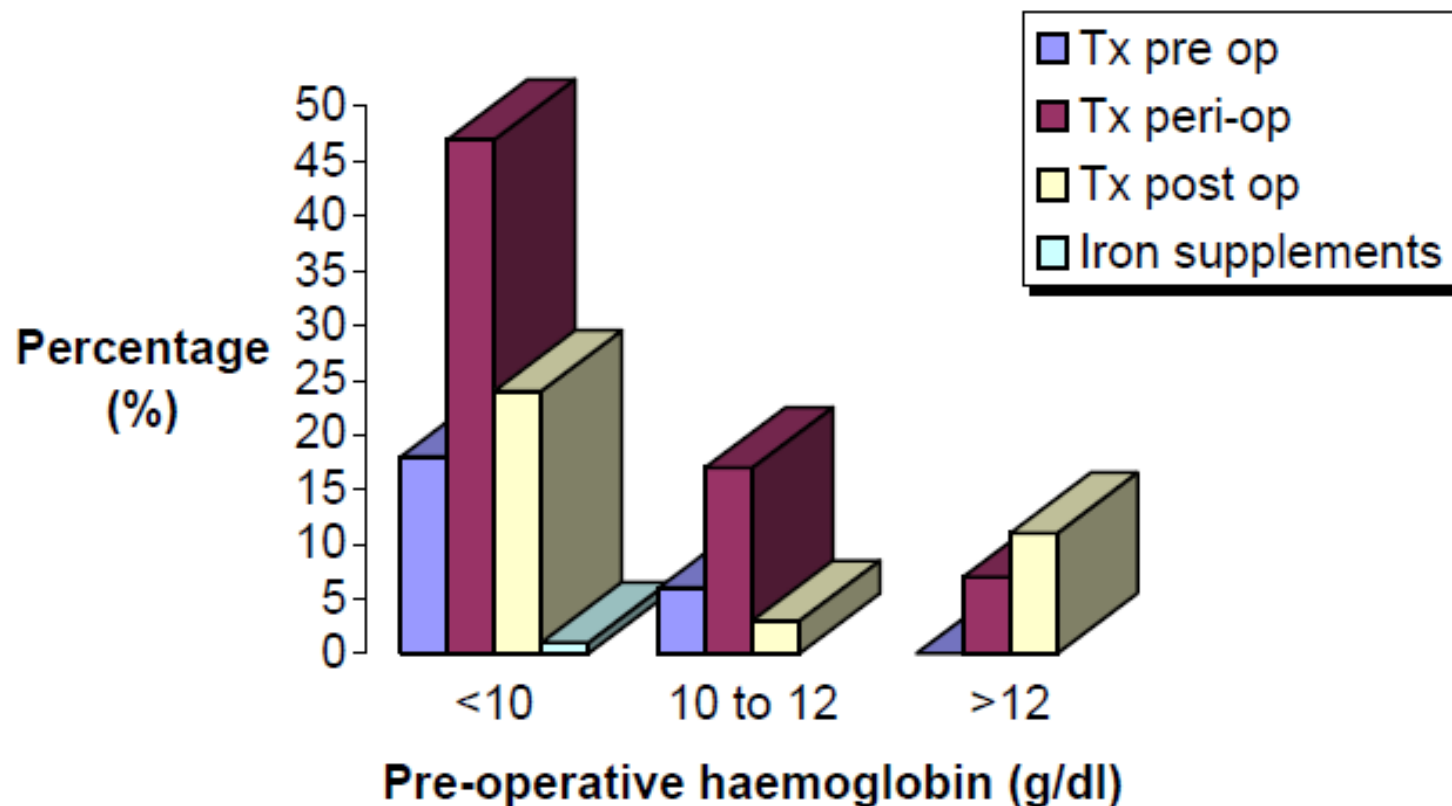
Optimising a Patient's Condition

- It is now recognised that correcting **even minor degrees** of anaemia **significantly reduces** the need for transfusion and the resultant increase in morbidity and mortality following major surgery

West Midlands RTC Audit 2005

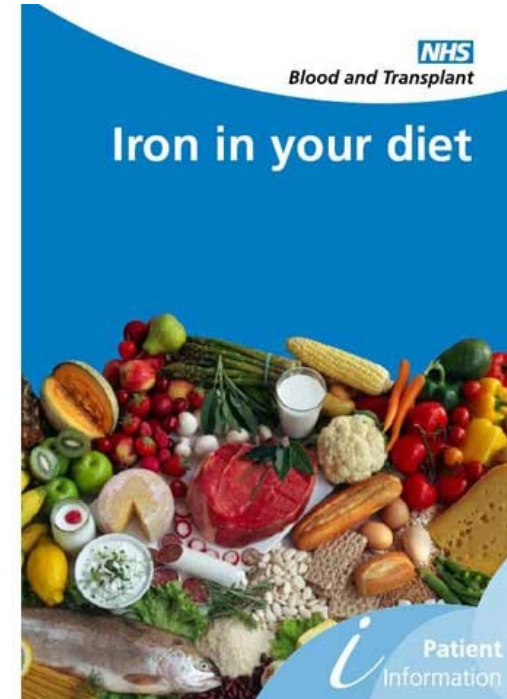


Oxford Regional Audit of Preoperative Assessment in Relation to Blood Conservation February 2005



Types of Treatment

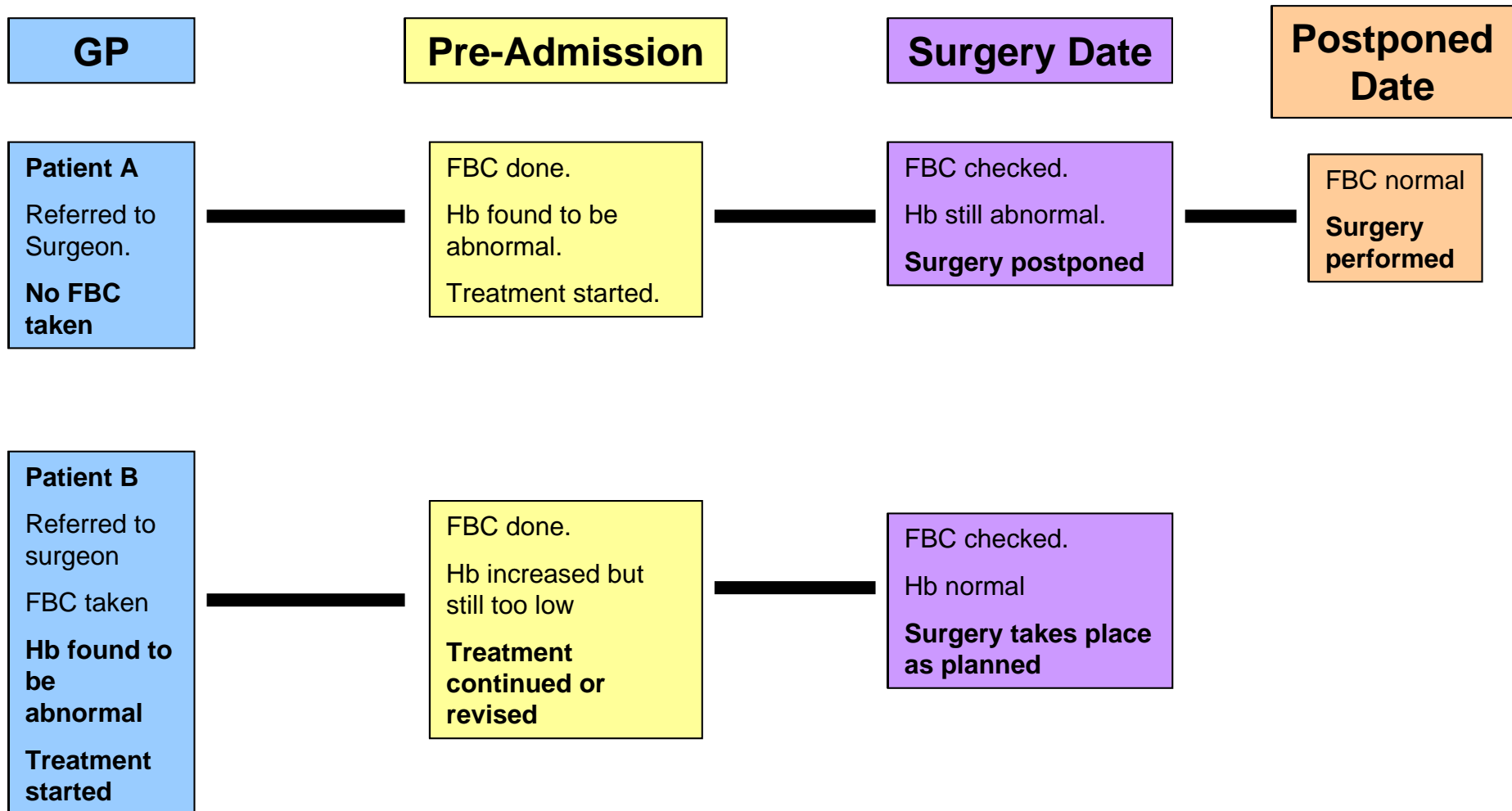
- Better Diet
- Oral Iron
- IV Iron
- Folate
- Remember most importantly to **investigate cause of anaemia**



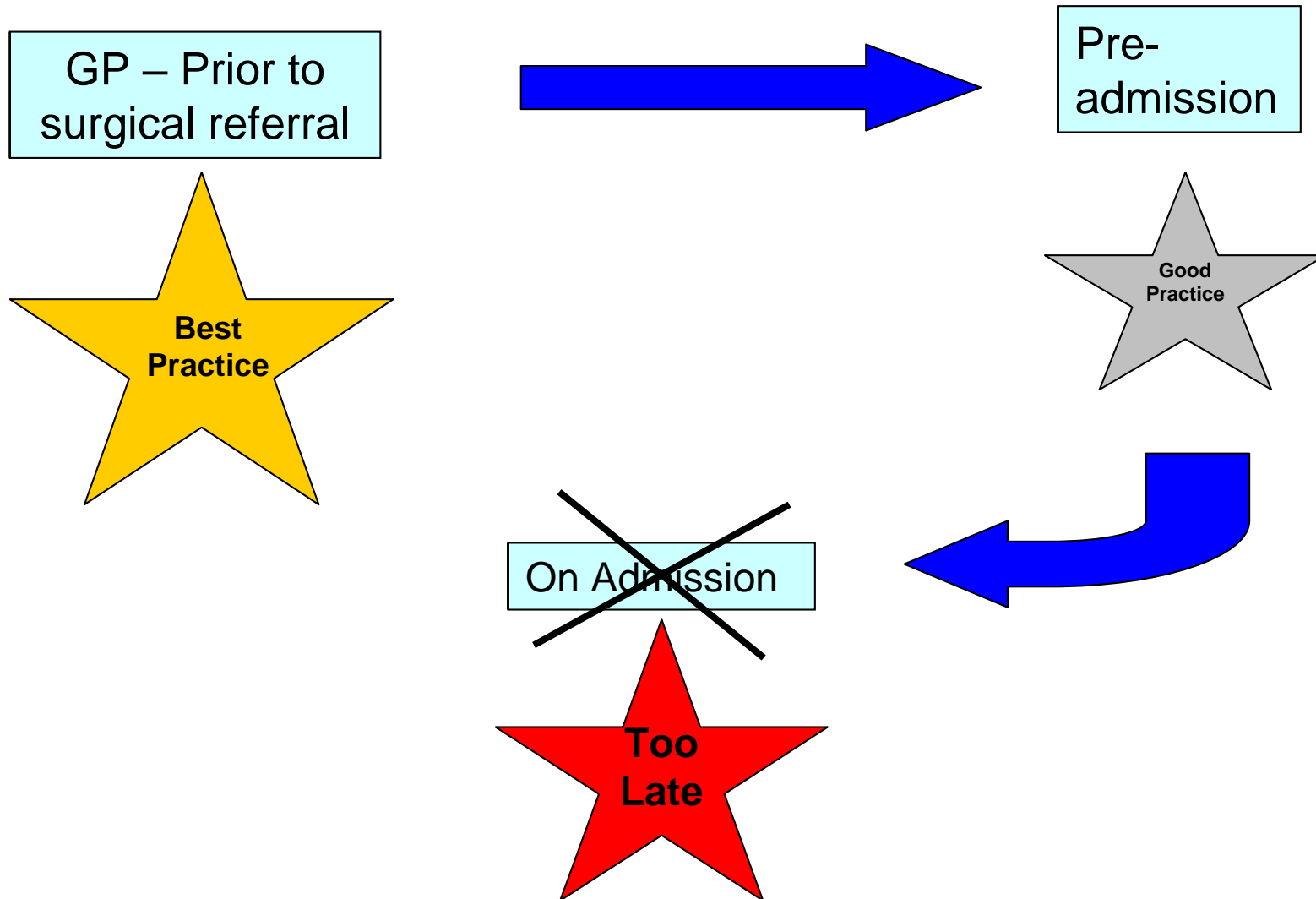
Iron Therapy

- Oral Iron - Readily available, can cause side effects and compliance can be poor due to this, many factors can affect absorption of iron including underlying condition— compliance must be monitored
- IV Iron – works quicker as able to ensure loading dose is given, patient must be referred for the treatment

Timeline



Best Practice



Primary Care

- If anaemic look for a cause
- If iron deficient, treat with oral iron and look for cause
- Optimise prior to referral
- Early detection of anaemia allows time to treat iron deficiency or refer other anaemia's

Pre-Operative Assessment

Pre Op Assessment / Out patients appointment

1. Take pre-operative blood tests including FBC & G&S
2. Provide written information on transfusion and the alternatives

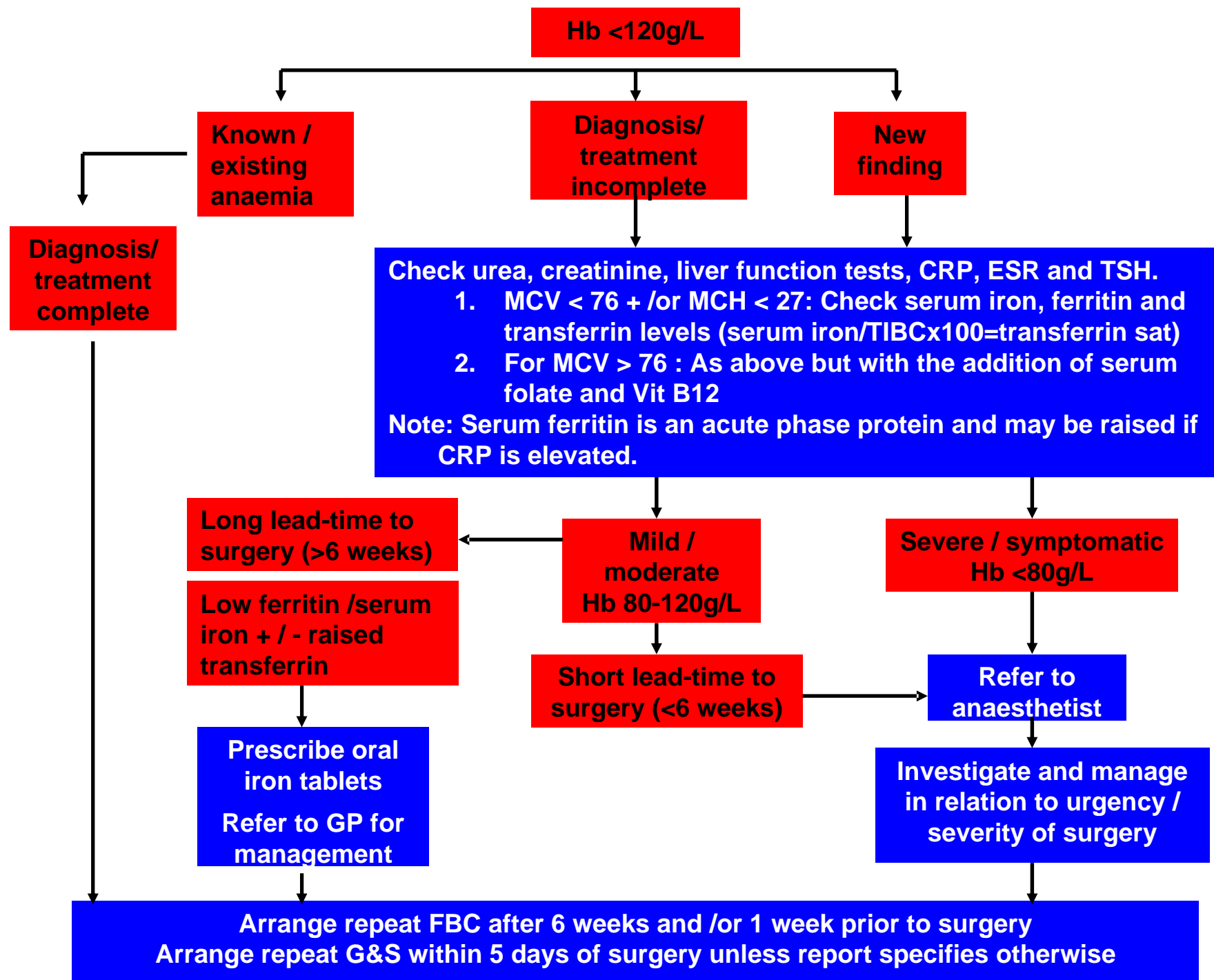


**Hb
>120g/L**



Arrange repeat FBC after 6 weeks and /or 1 week prior to surgery
Arrange repeat G&S within 5 days of surgery unless report specifies otherwise





Other Important Pre-Operative Considerations

- Where ever possible investigate all anaemia completely before referral for surgery
- Anaemia of Chronic Disease – Referral
- Haemoglobinopathies – important to determine if any underlying, treatable anaemia
- Antibodies – If atypical antibodies are present then blood should be made available to cover the surgery
- If any other underlying conditions which will affect blood loss ensure to enlist specialist help

Drugs Which Can Increase Bleeding Risk

- Aspirin – Usually discontinue 2 weeks prior to surgery
- NSAIDS – 1 week
- Clopidogrel – 7 days
- Dipyridamol – 24 hours

Management of Warfarinised Patient Undergoing Invasive Procedure or Surgery

*Skin biopsy

*Dental extractions

*Some Endoscopic procedures –
diagnostic procedures, biopsy of
non-vascular tissues,
biliary/pancreatic stents

Is patient having a
Low Bleeding Risk
Procedure*?

No

Yes

No need to stop
warfarin

Stop warfarin 5 days
prior to procedure
date

High Thrombotic Risk:

VTE within last 3/12

AF plus previous CVA/TIA or prosthetic
valve or mitral stenosis or previous embolic
event.

Mitral valve replacement

**Therapeutic LMWH Bridging
required**

Commence Fragmin (weight related dose)
iu/kg od

Low Thrombotic Risk:

Low risk AF (no prior TIA/CVA or
other risk factors)

Bileaflet aortic valve replacement

VTE more than 3/12 earlier

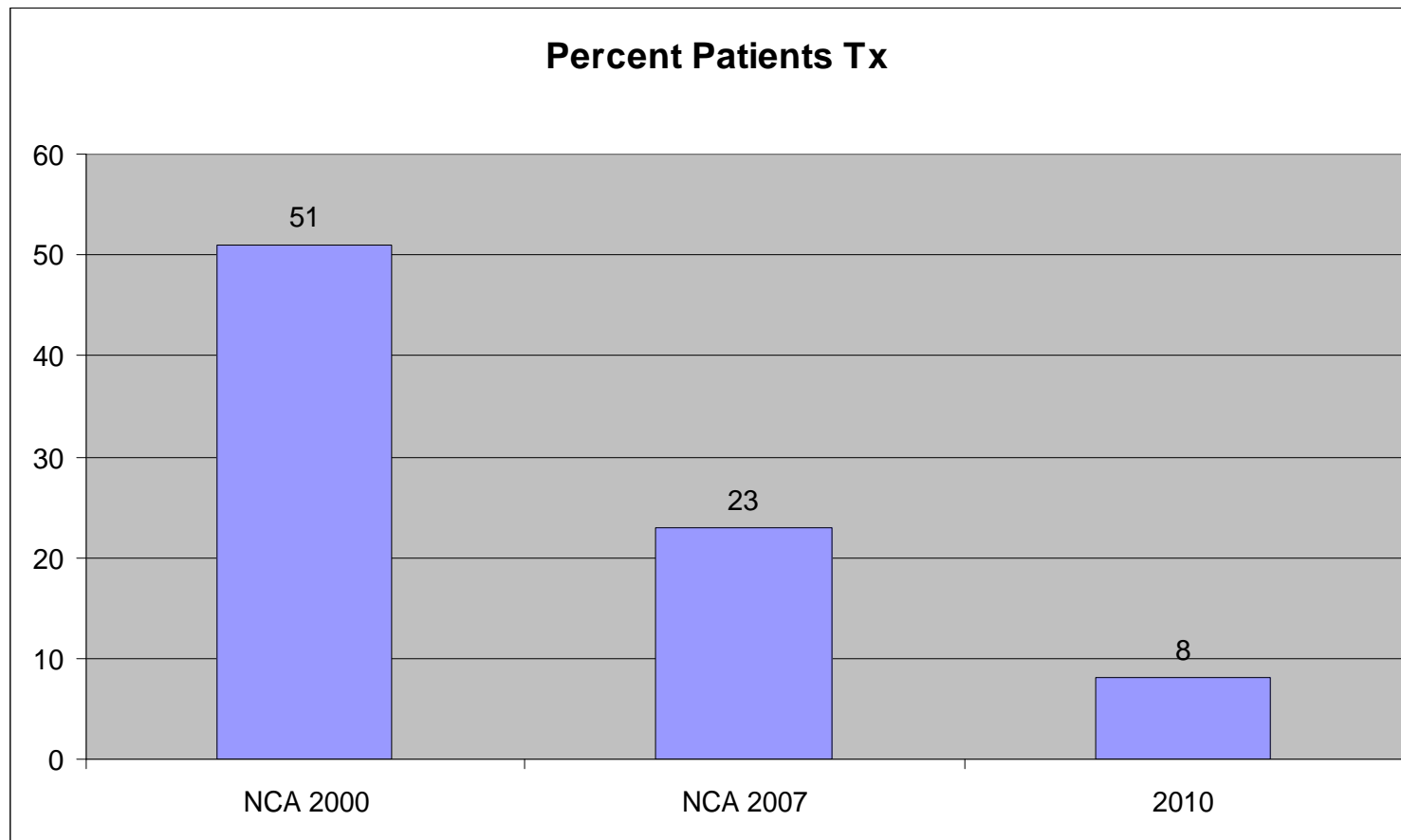
**No therapeutic LMWH Bridging
required**

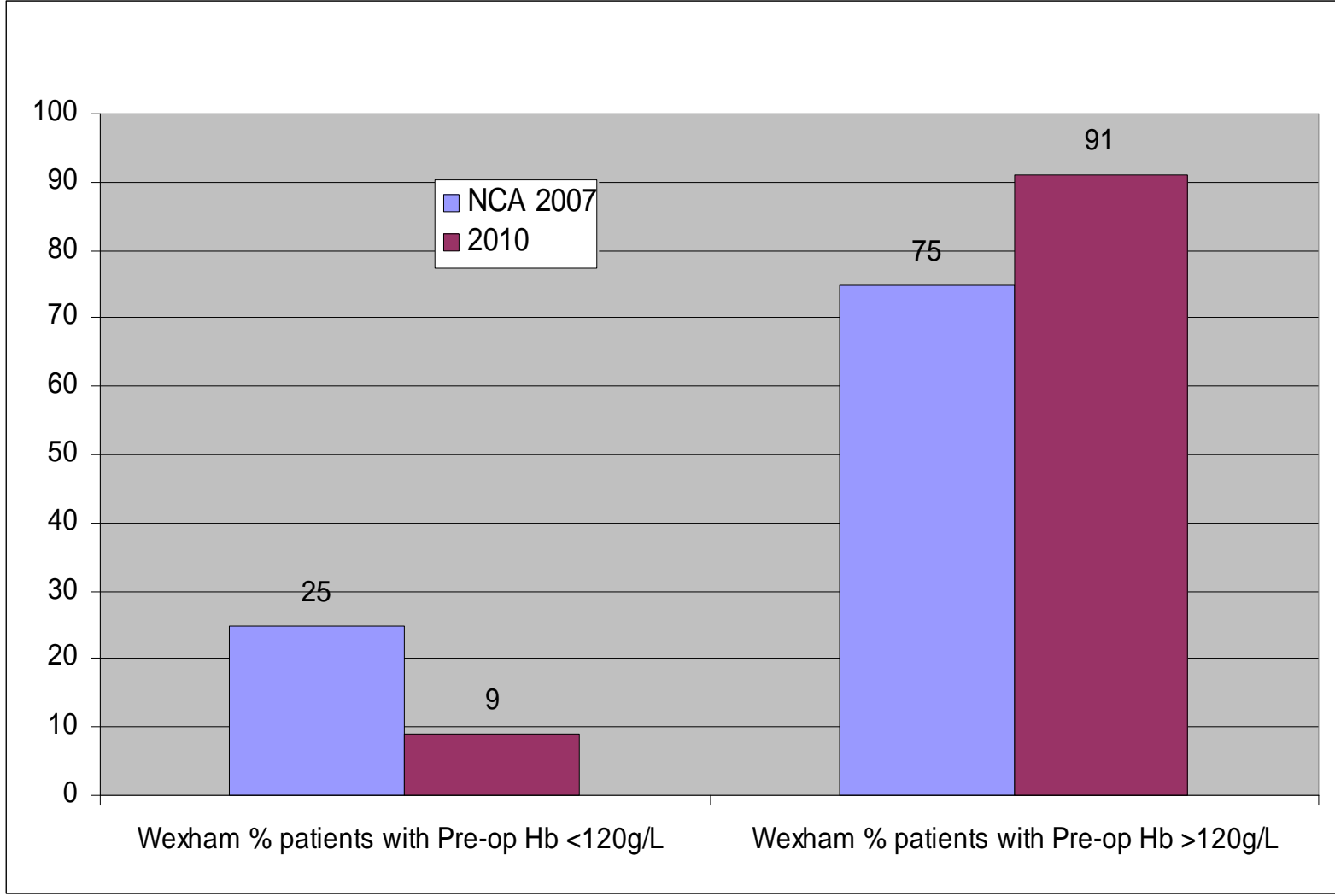
Consider standard thromboprophylaxis
Fragmin 5000iu sc od if so indicated by
VTE risk assessment.

Intra-Operative Considerations

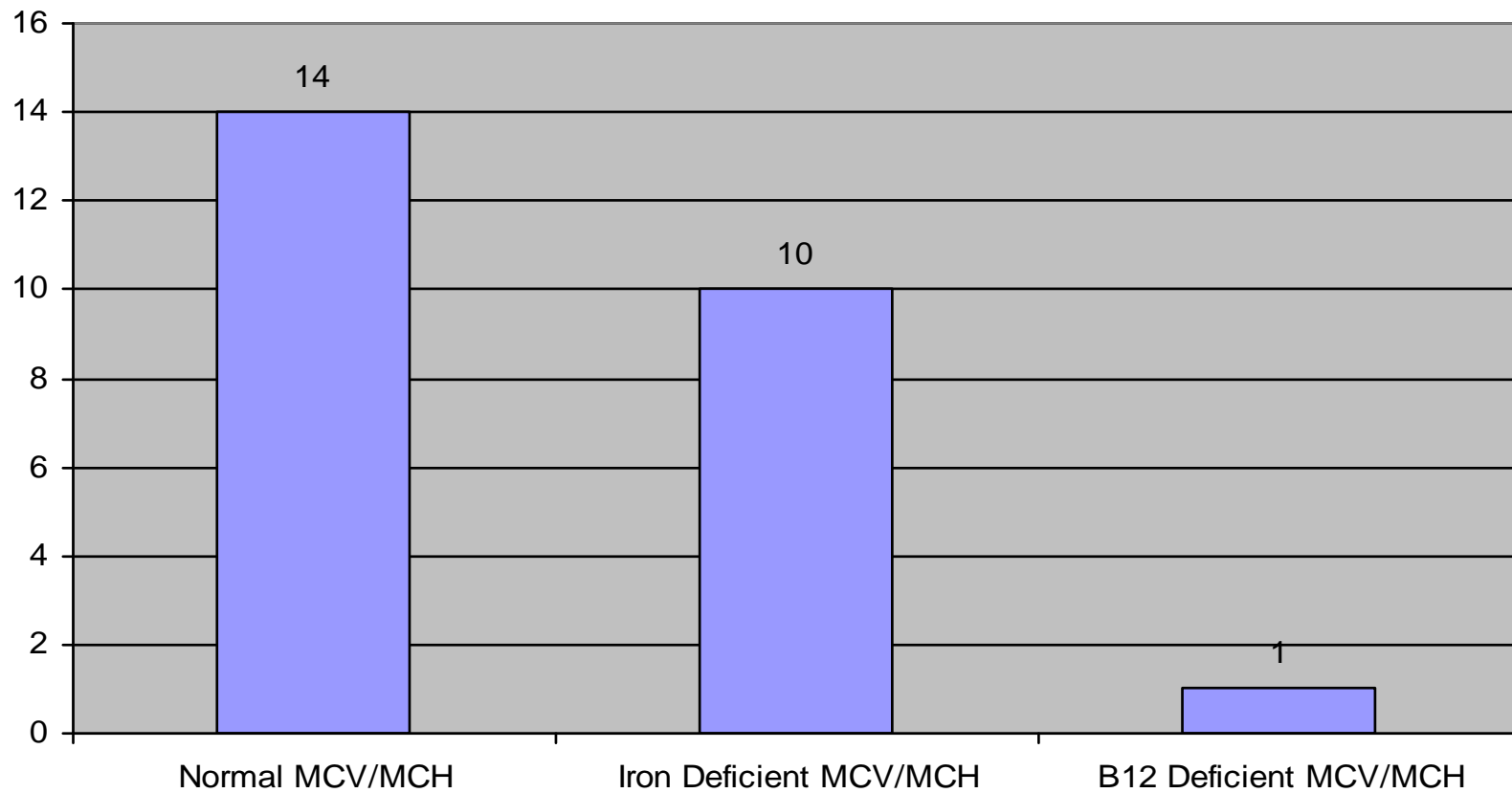
- Anaesthetic techniques used that will reduce blood loss eg. controlling blood pressure
- Surgical techniques
- Use near patient testing to determine blood loss rather than 'estimation'
- Transfuse 1 unit rather than 2 if required
- Possibility of use of Cell Salvage

Does Enhanced Recovery Work





Number of Patients with Hb<120g/L at Pre Admission



In Summary

- Transfusion is part of the Enhanced Recovery Program
- Early treatment of anaemia is essential in Enhanced Recovery
- GP's should investigate and treat all anaemia prior to referral for surgery where ever possible

References

- [Audit of blood use in orthopaedic surgery - comparative report March 2005](http://www.transfusionguidelines.org.uk/Index.aspx?Publication=RTC&Section=28&pageid=1183)
<http://www.transfusionguidelines.org.uk/Index.aspx?Publication=RTC&Section=28&pageid=1183>
- [Oxford Regional Audit of Pre-operative Assessment in Relation to Blood Conservation](http://www.transfusionguidelines.org.uk/docs/pdfs/rtscent_audit_pre_op.pdf)
http://www.transfusionguidelines.org.uk/docs/pdfs/rtscent_audit_pre_op.pdf
- [Delivering enhanced recovery: Helping patients to get better sooner after surgery \(PDF, 651K\)](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_115156.pdf)
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_115156.pdf

Thank You

