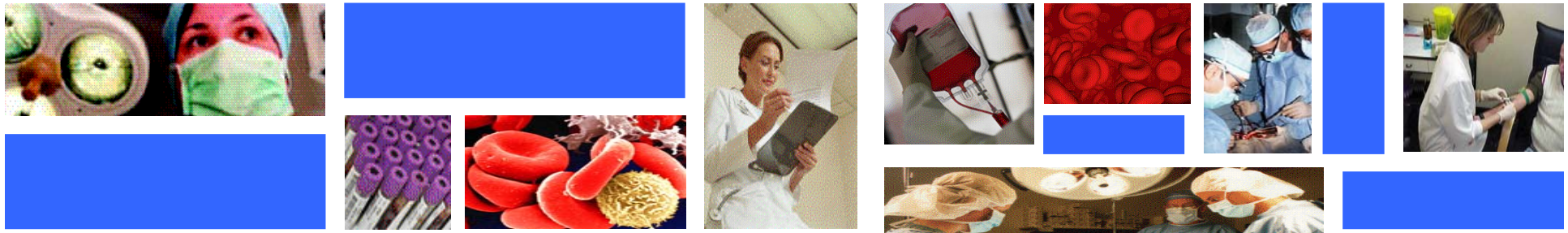


# Preparing Patients for Surgery (Management of Anaemia)

Dr Craig Taylor  
Consultant Haematologist

Andrea Blest  
Transfusion Liaison Nurse - NHSBT



# Why?



## Health Service Circular

Series Number: HSC 2002/009  
Issue Date: 04 July 2002  
Review Date: 04 July 2005  
Category: Public Health  
Status: Action

*sets out a specific action on the part of the recipient with a deadline where appropriate*

### Better Blood Transfusion

#### Appropriate Use of Blood

Avoid unnecessary use of donor blood in clinical practice

Objective	Action	By whom and when
Secure appropriate and cost-effective provision of blood transfusion and alternatives in surgical care	Ensure that mechanisms are in place for pre-operative assessment of patients for planned surgical procedures	Chief Executives of NHS Trusts working with clinicians and Hospital Transfusion Teams. By April 2003.

**For planned surgery, the arrangements for pre-operative assessment should permit the diagnosis and correction of anaemia in advance of surgery.....**

**most patients undergoing elective surgery should not require transfusion support if their pre-operative haemoglobin is normal.**

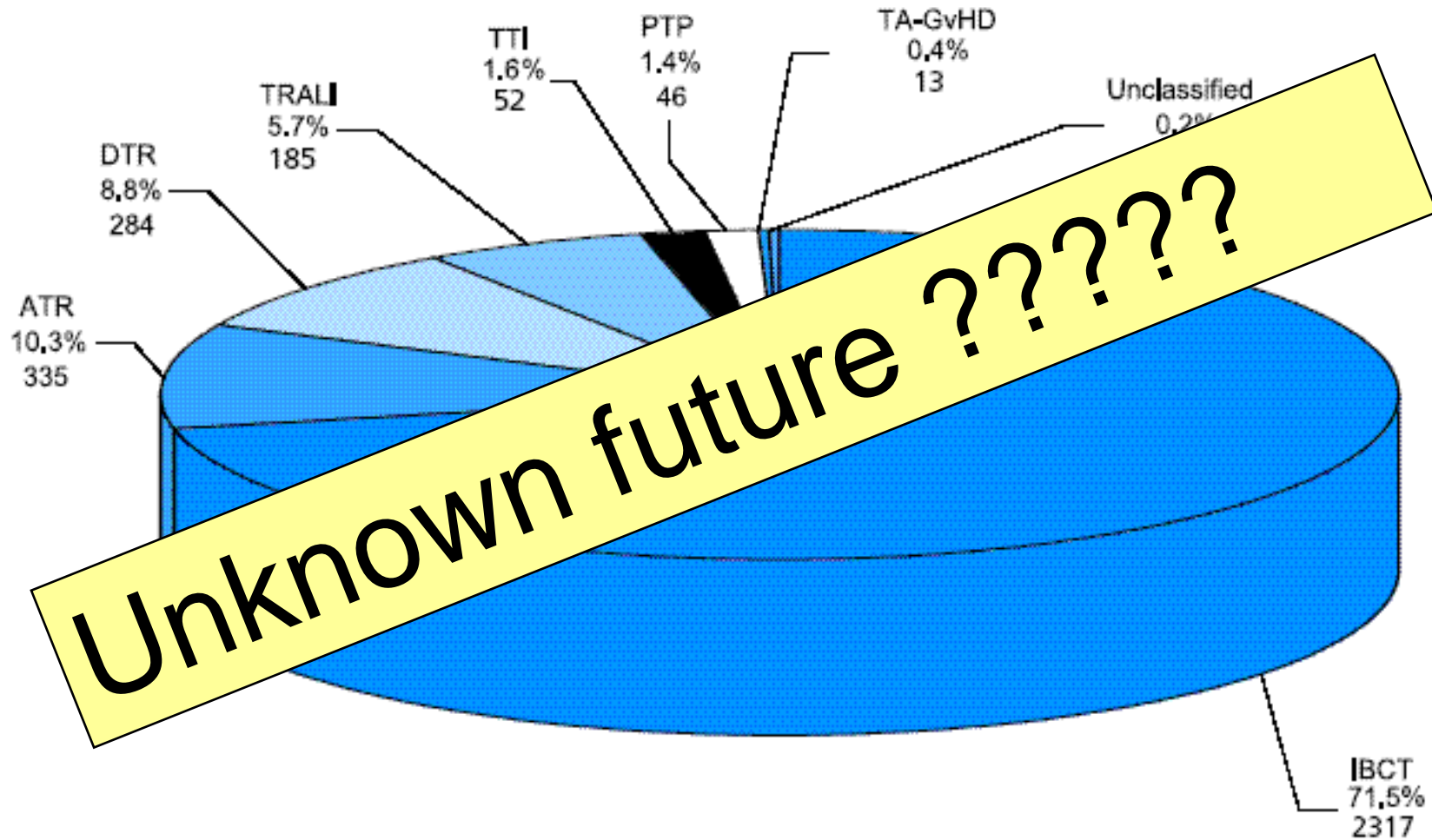


# Why?

SERIOUS HAZARDS OF TRANSFUSION

# SHOT

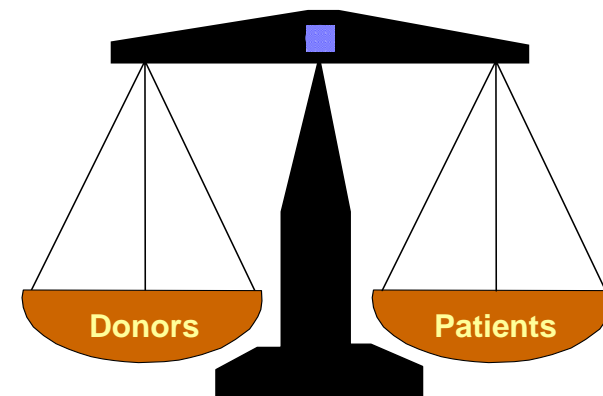
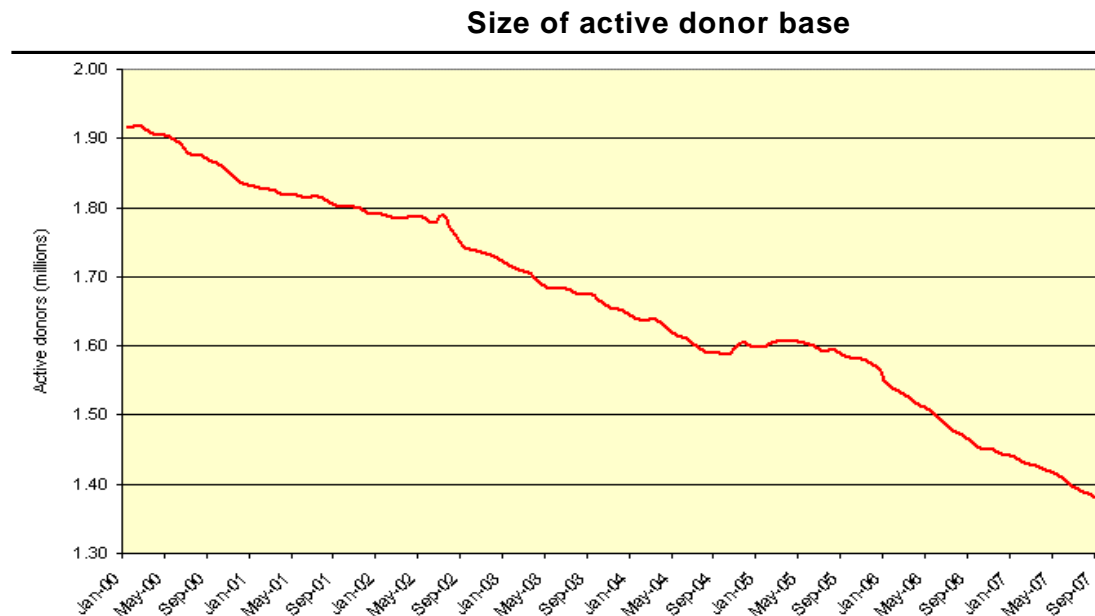
Cumulative data 1996 - 2005



# Why?

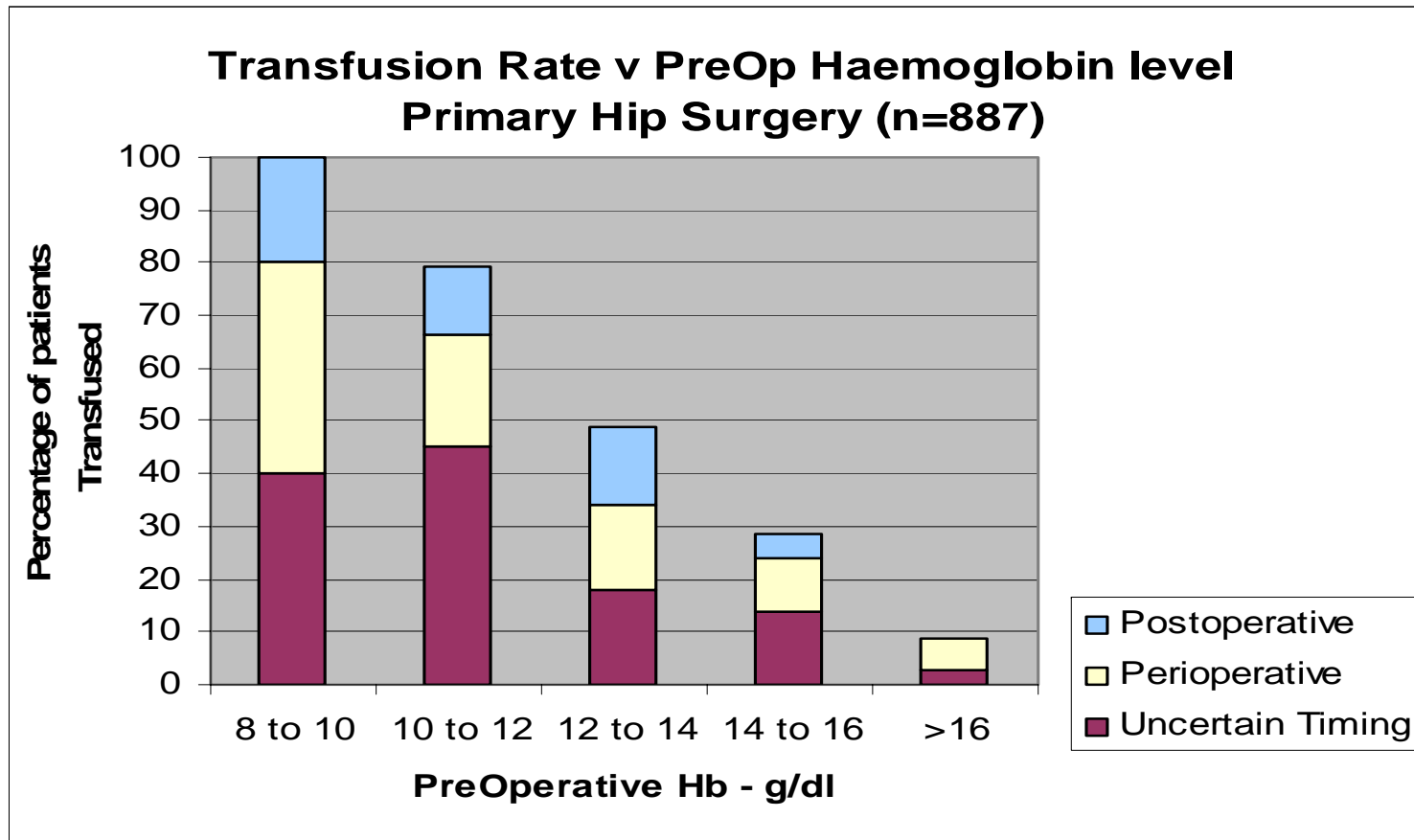


- Blood conservation
  - 40-50% of blood goes into surgical patients
  - Scarce and expensive resource



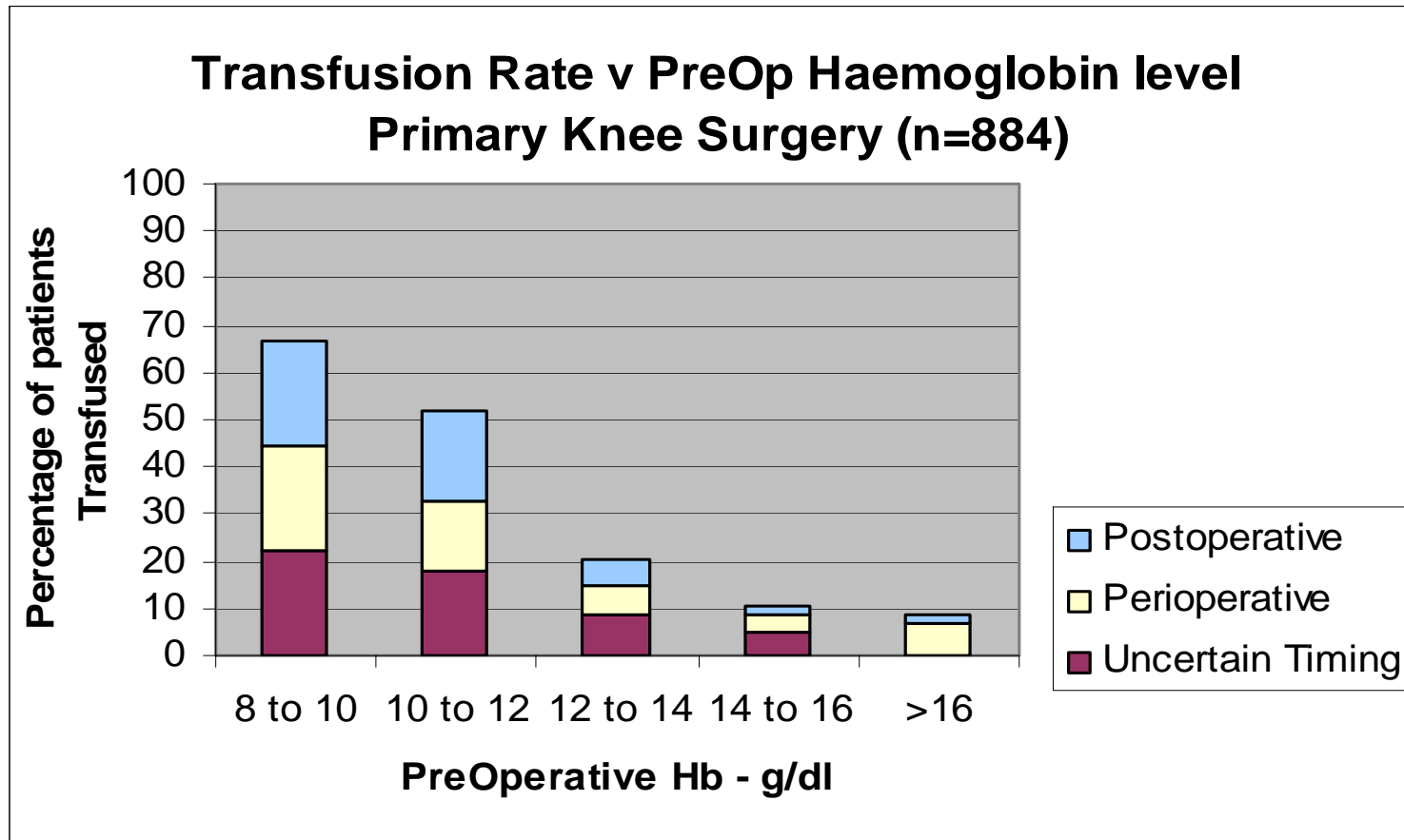
# Anaemic patients use more blood

WM RTC regional survey 2005

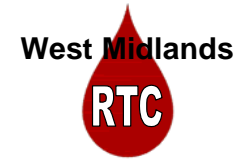


# Anaemic patients use more blood

WM RTC regional survey 2005



# WM RTC Audit of pre-operative assessment clinics



## Participation

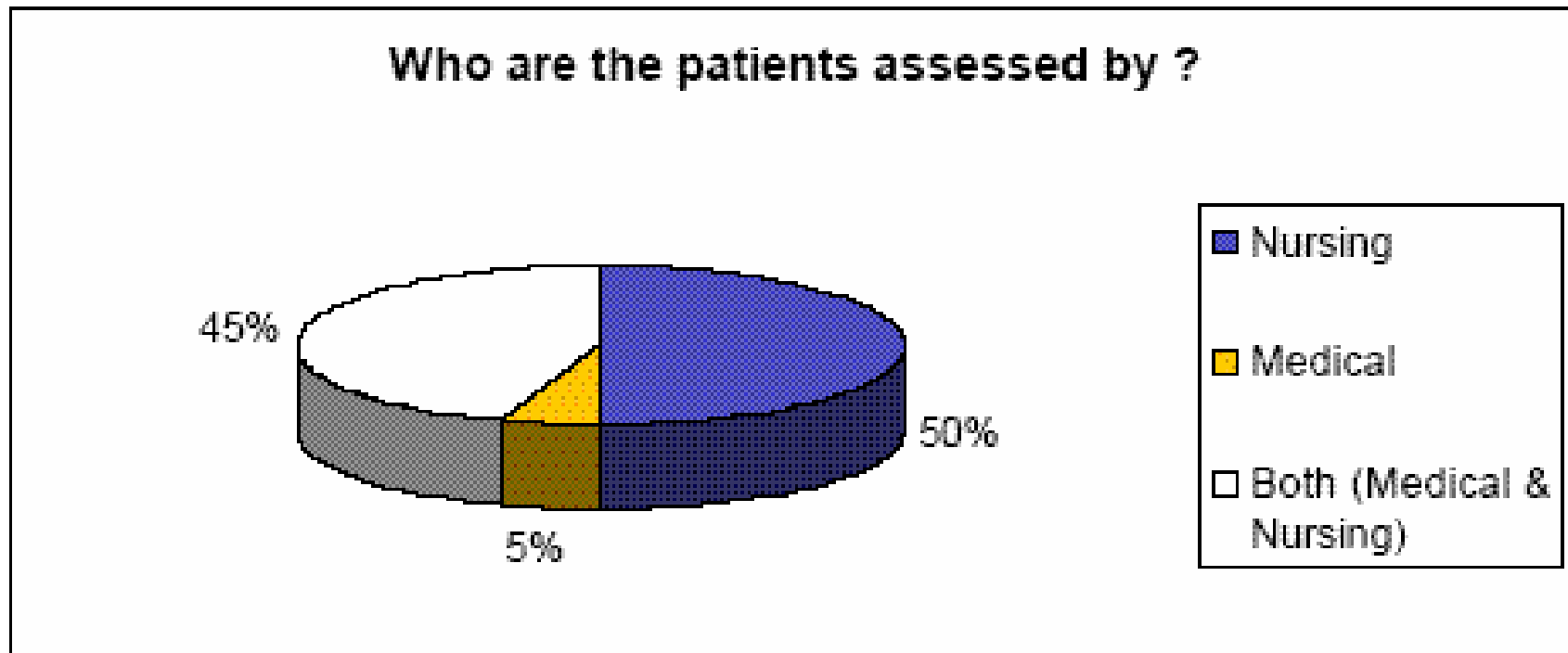
24 West Midlands hospitals were invited to participate:

- Part 1 = Questionnaire (2005)
  - 15/24 hospitals provided data (56 clinics)
  - All clinics
  - NHS and independent
- Part 2 = Audit of cases (2006/7)
  - 10/15 hospitals provided data (29 clinics)
  - Orthopaedics/Gynaecology/General clinics only
  - NHS Only

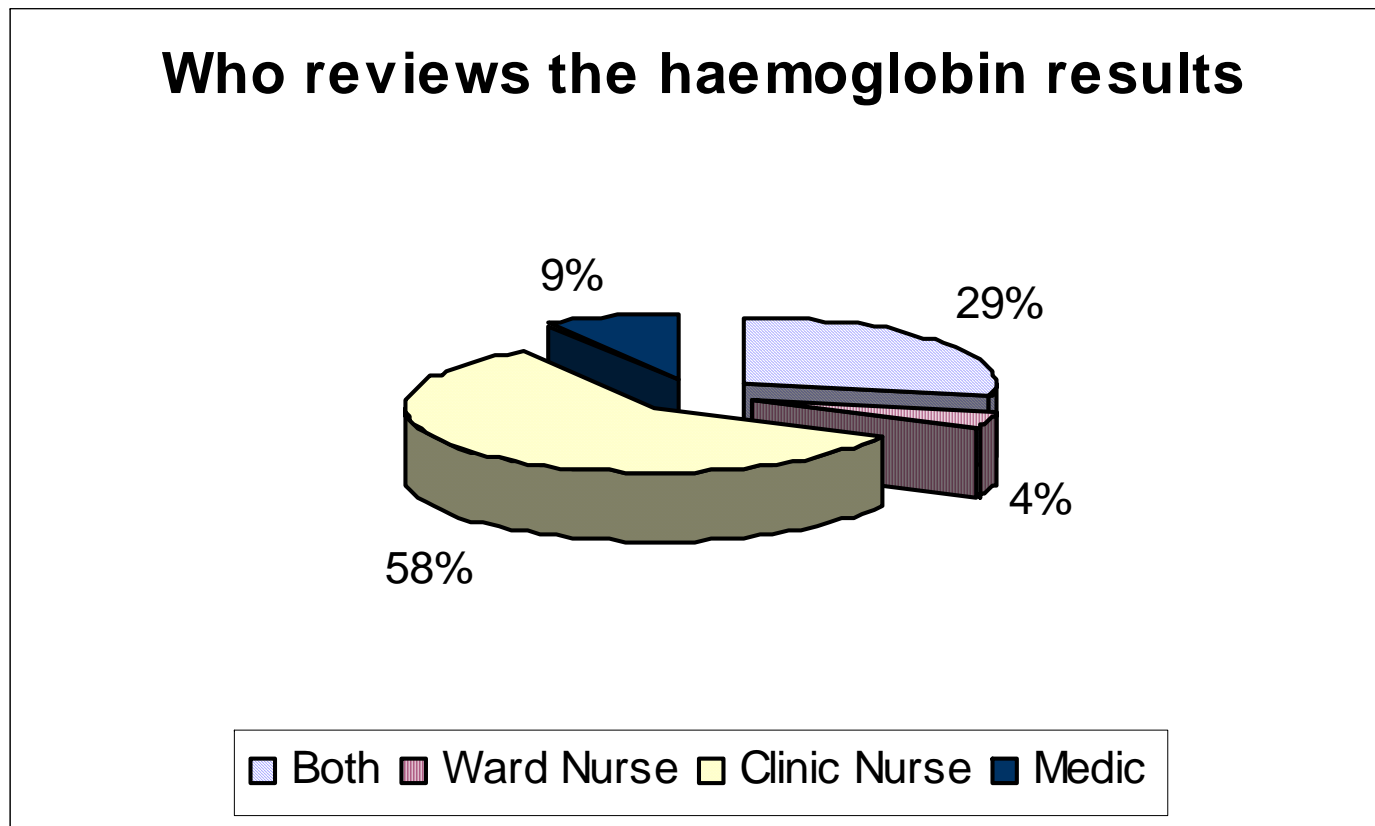


# Results Part 1

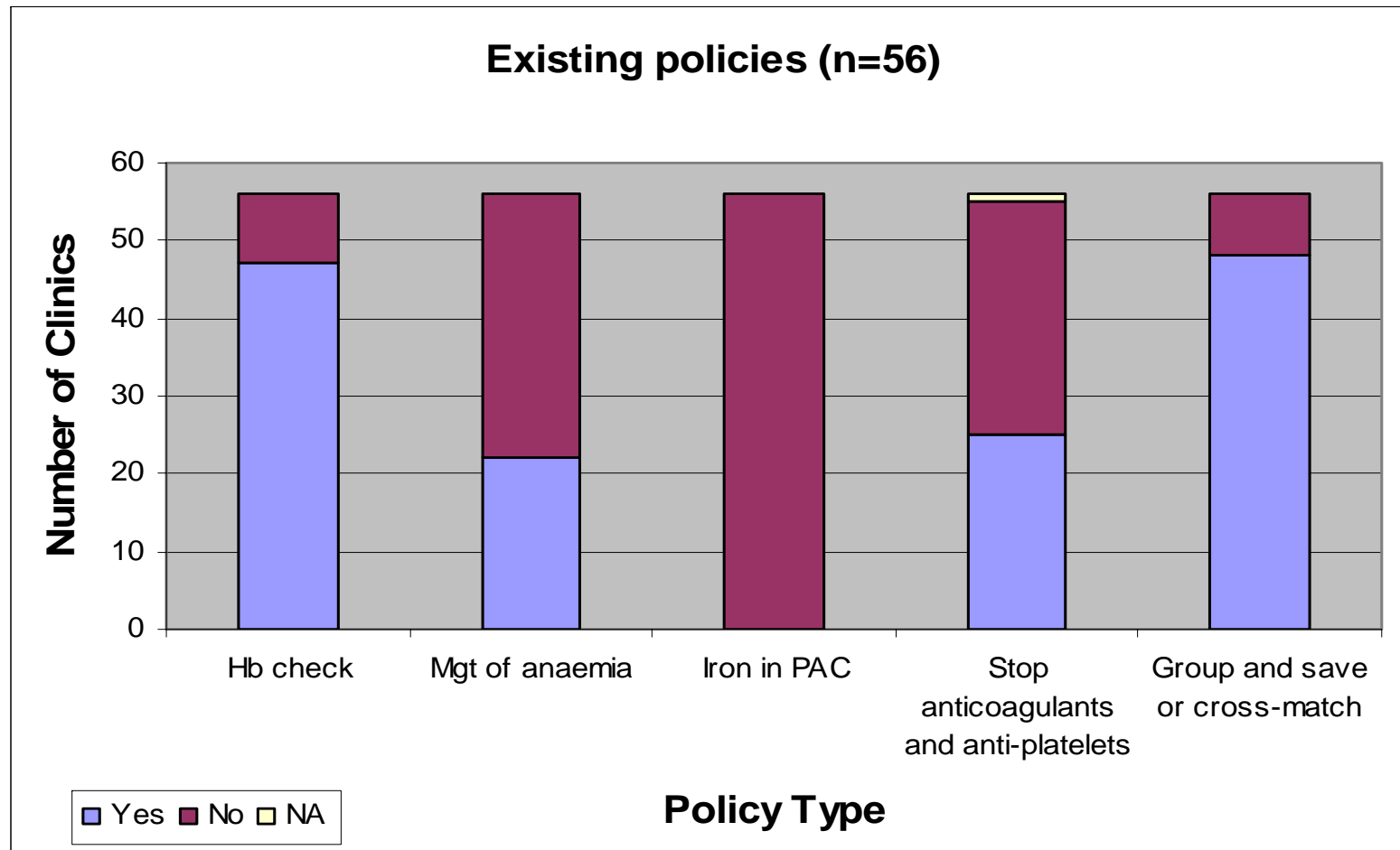
## Who are the patients assessed by?



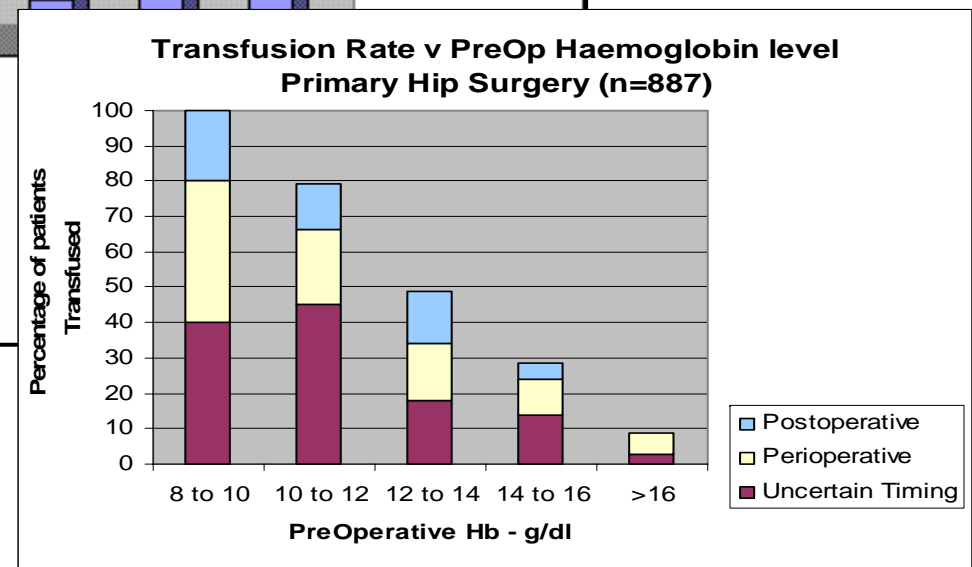
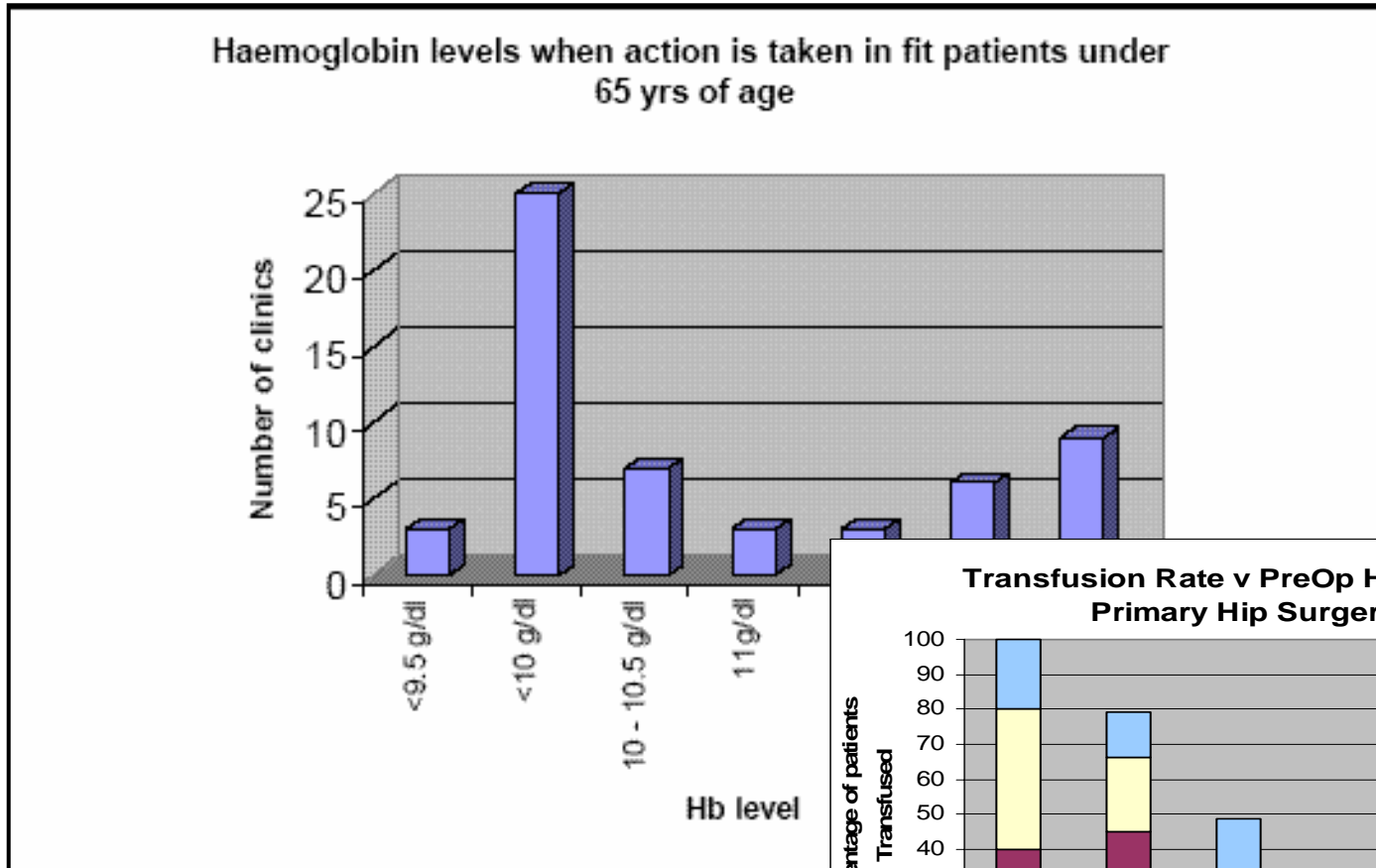
# Who reviews the haemoglobin results?



# Does the clinic have written policies?



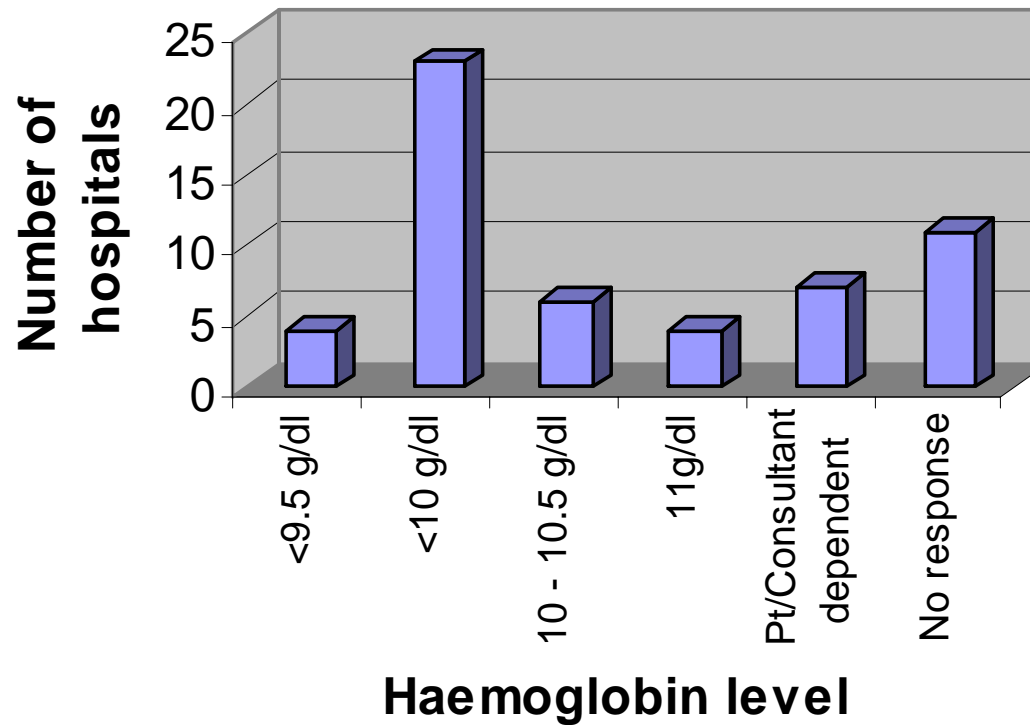
# At what Haemoglobin level is action taken?



The World Health Organisation (2001) classifies anaemia as:  
 Male haemoglobin below 13g/dl  
 Female haemoglobin below 12g/dl

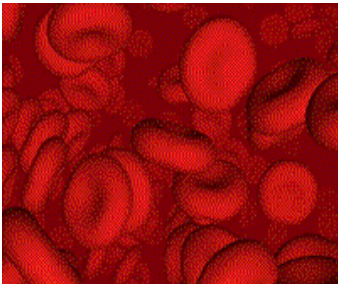
# And in those at higher risk?

Haemoglobin levels when action is taken in patients with cardio-respiratory disease or over age 65 yrs.



# What actions are taken?

- Contact Consultant
- Contact the GP
- Repeat Hb
- Refer for investigation (usually the GP)
- Give iron (5 clinics)
- **Pre-operative Transfusion (11 clinics)**



# Part 2

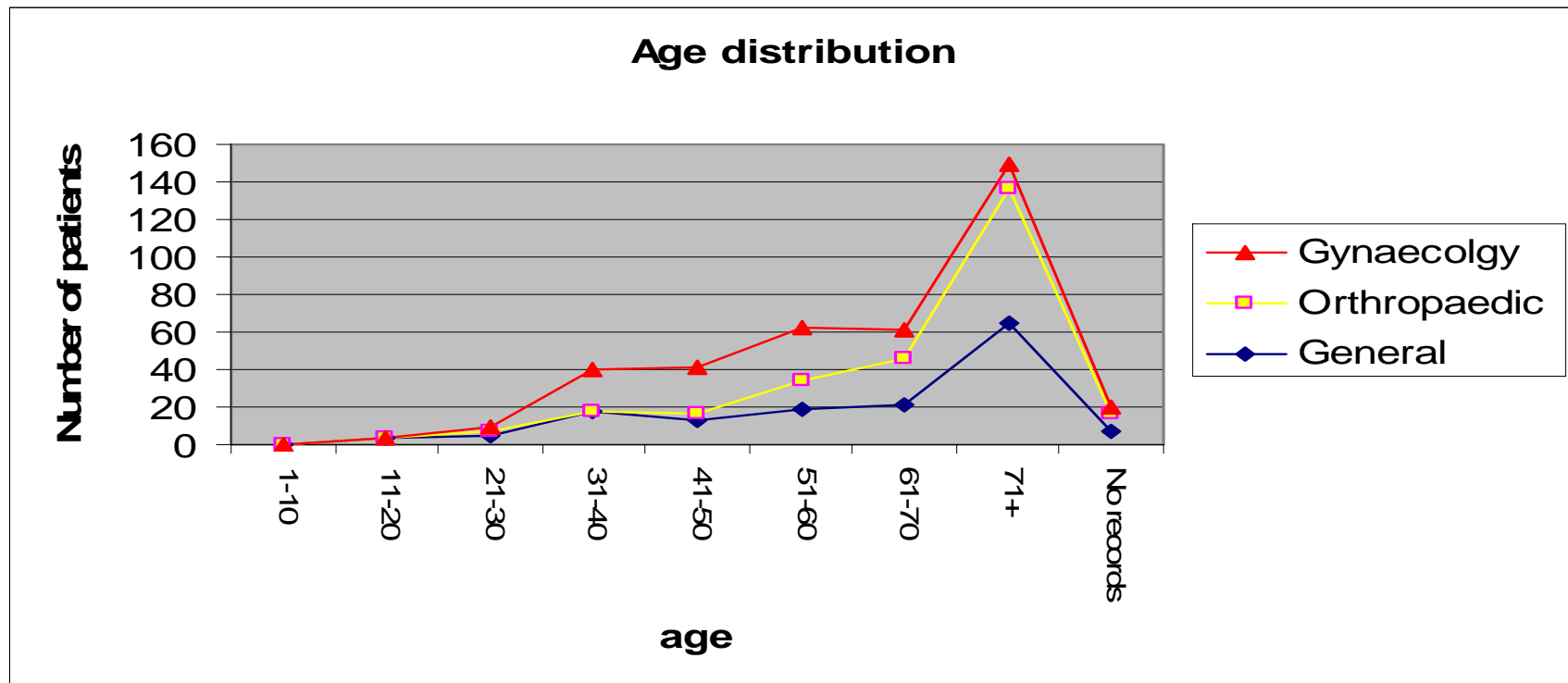
- Retrospective
- Notes review
- Anaemia defined as Hb below 13g/dl
- 11/15 hospitals responded
- Orthopaedics/Gynaecology/General clinics only
- 29 clinics participated

# Audit Sample

- Patients who would normally have G&S or Cross Match
- 387 with Hb<13g/dl
- Denominator data available from 3 trusts

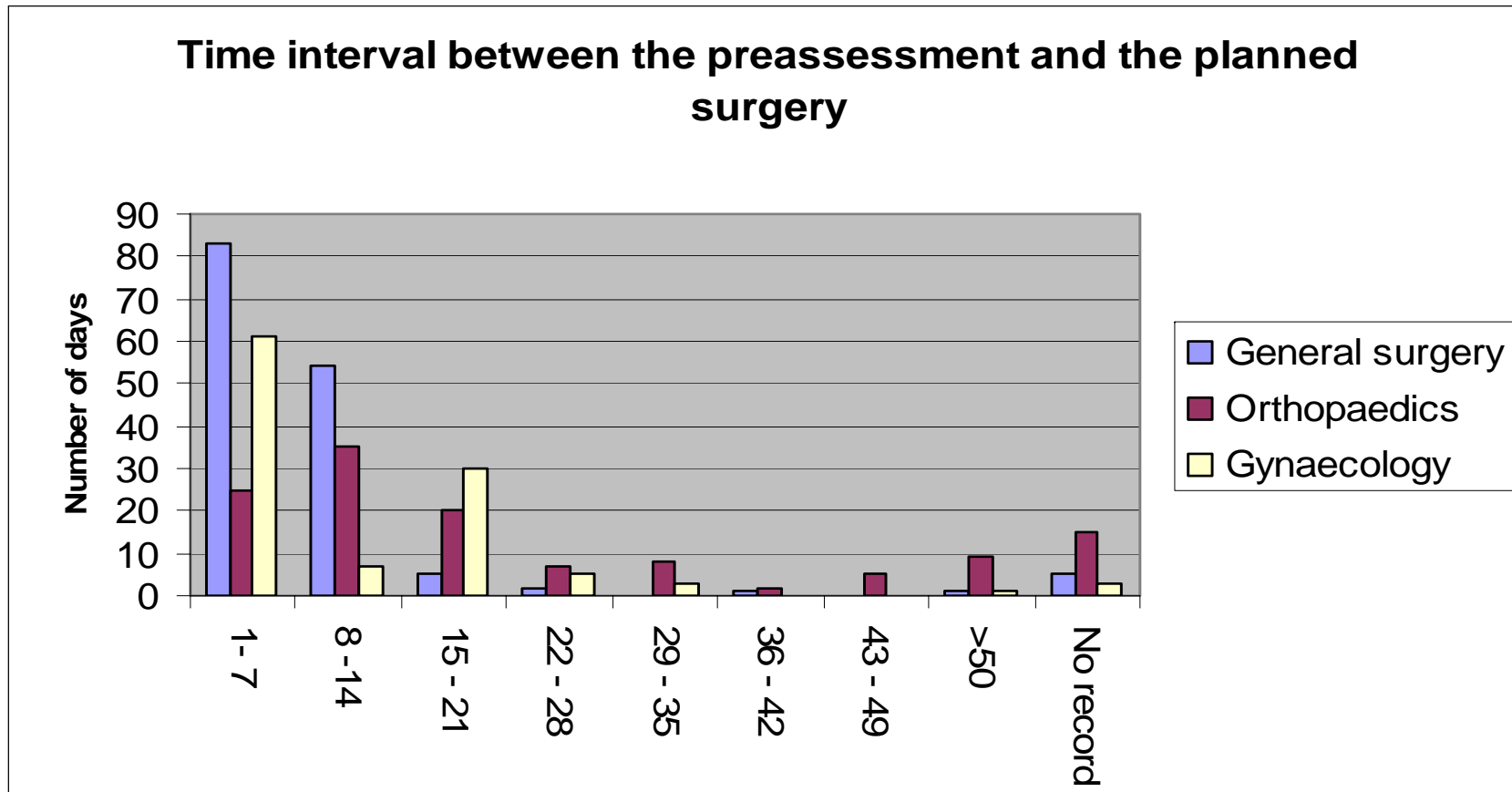
Clinic	% of patients with haemoglobin <13g/dl
General Surgery	21%
Orthopaedics	23%
Gynaecology	34%

# Audit Sample

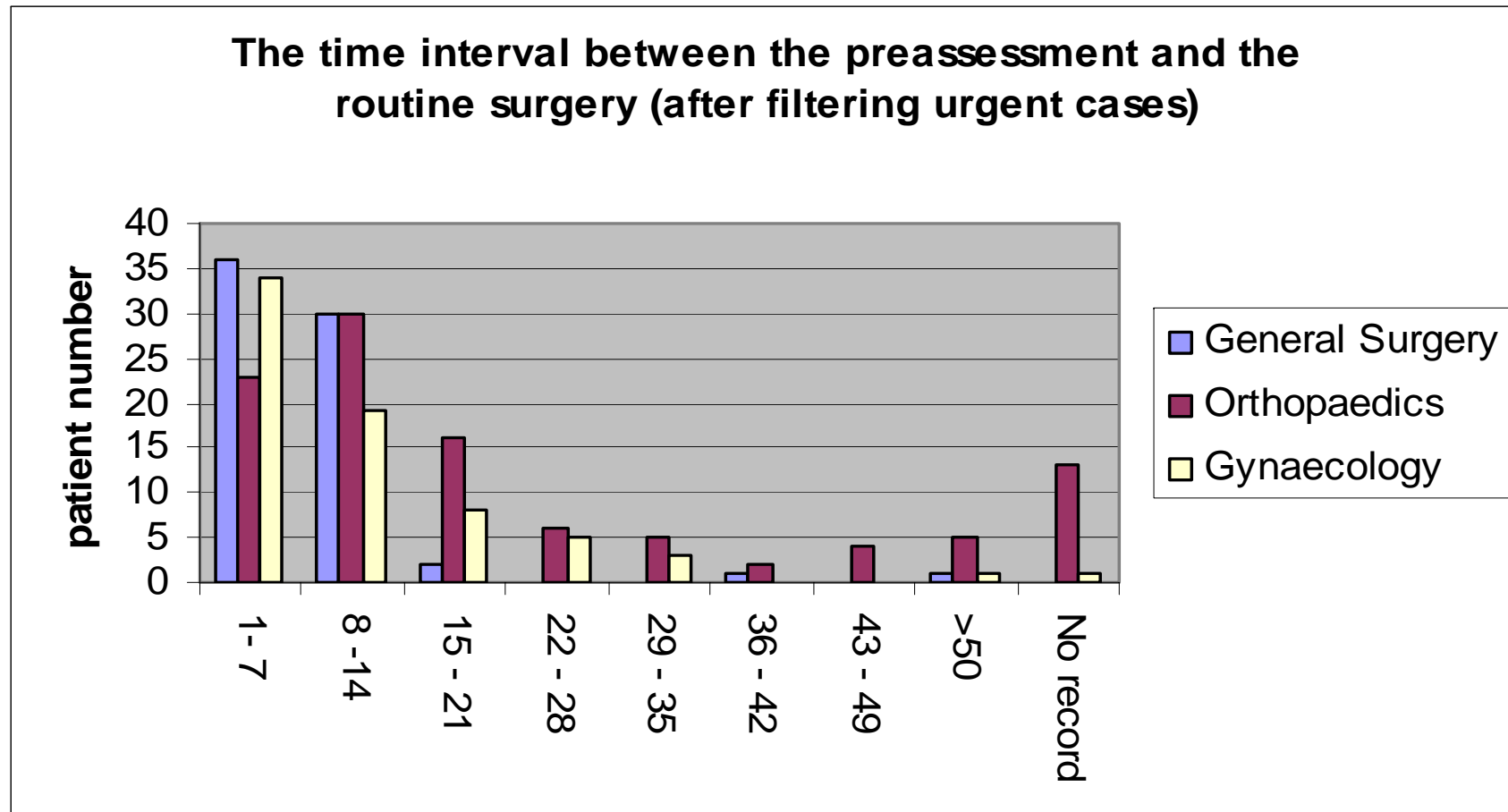


55% general surgery and 73% orthopaedic are female patients

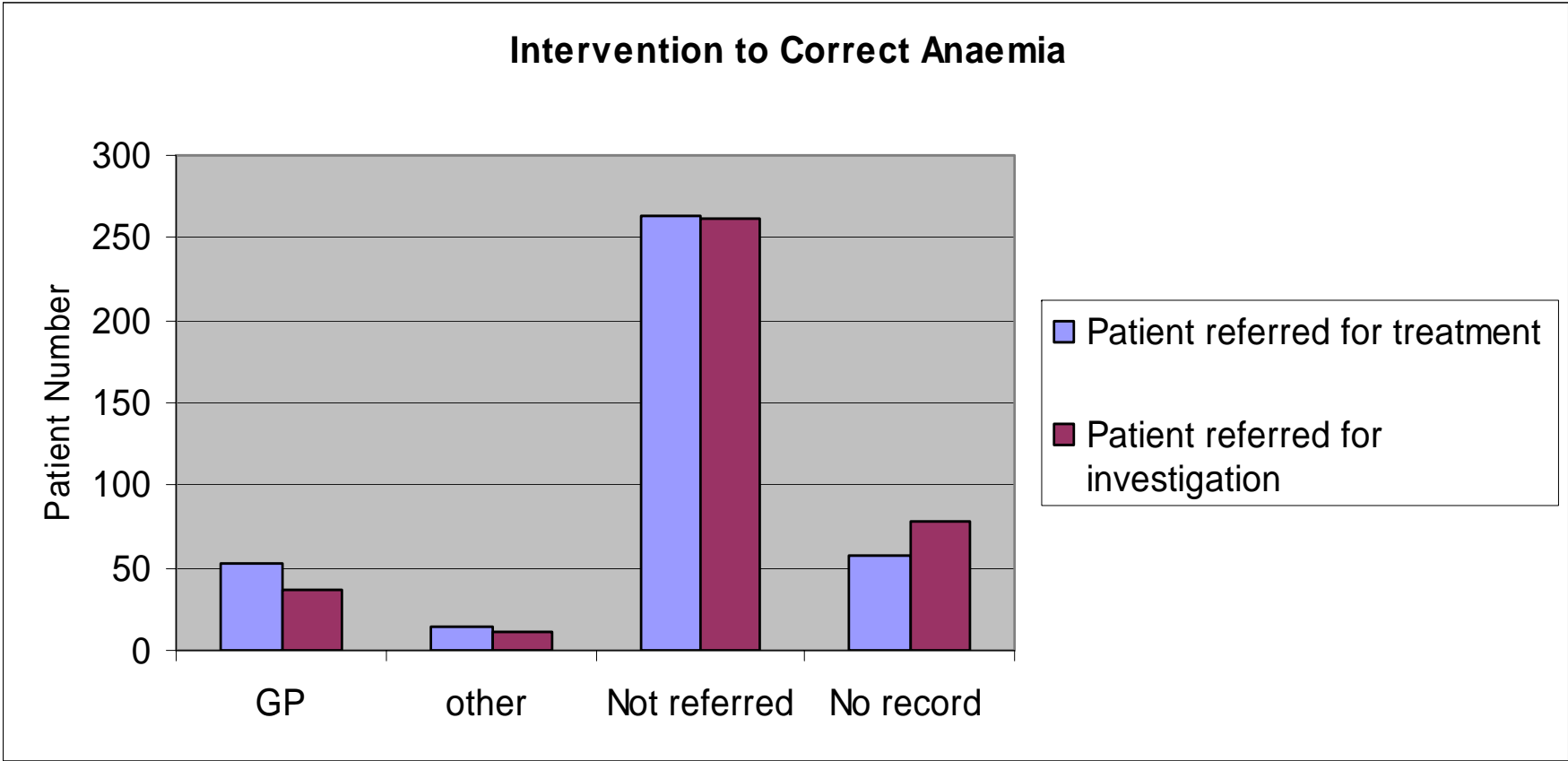
# Time Intervals



# Intervals for 'Routine' only

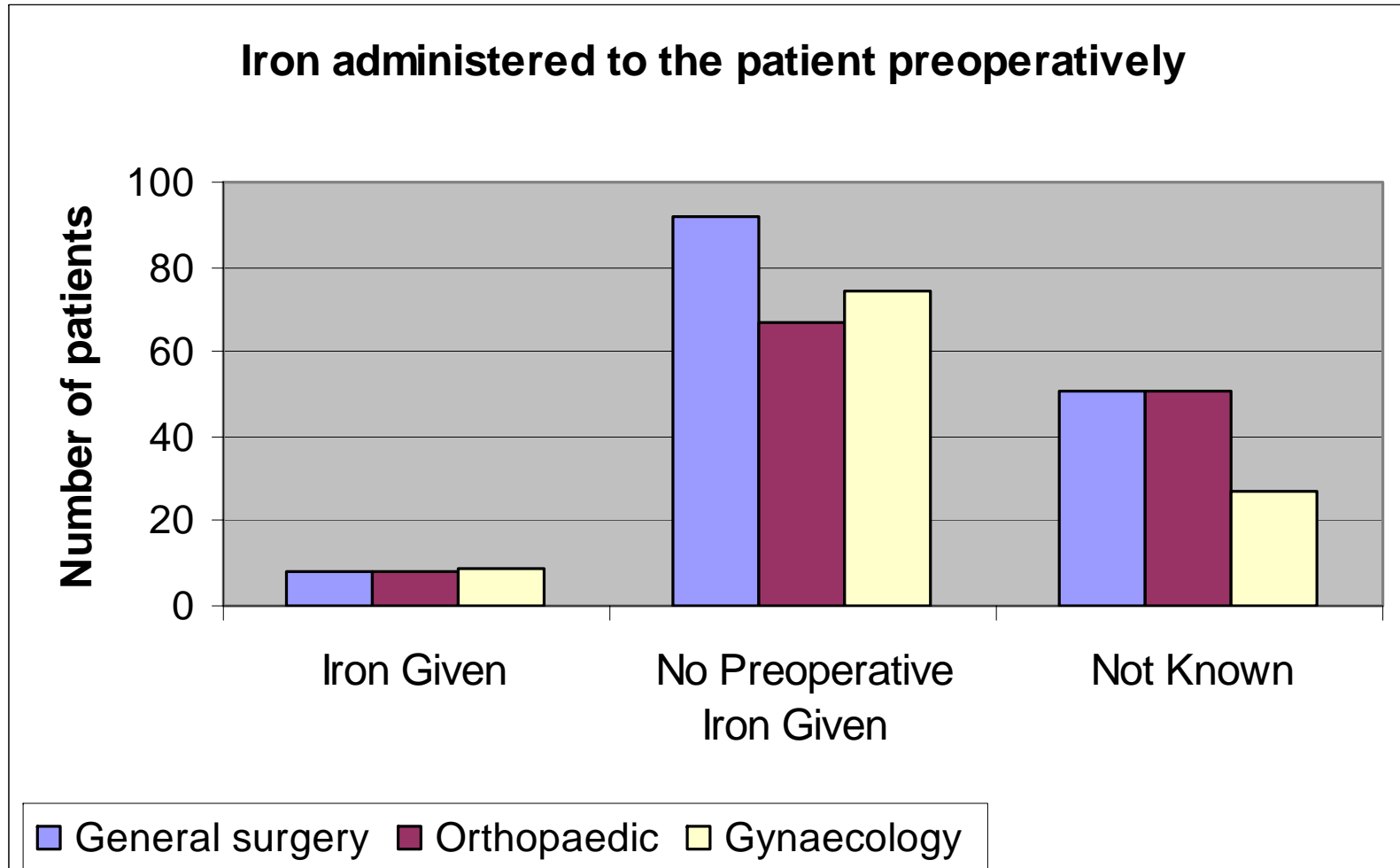


# Interventions to Correct Anaemia

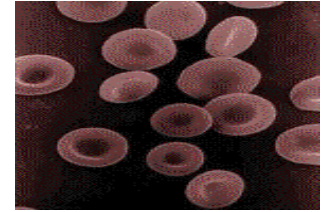


17% were referred for treatment/investigation

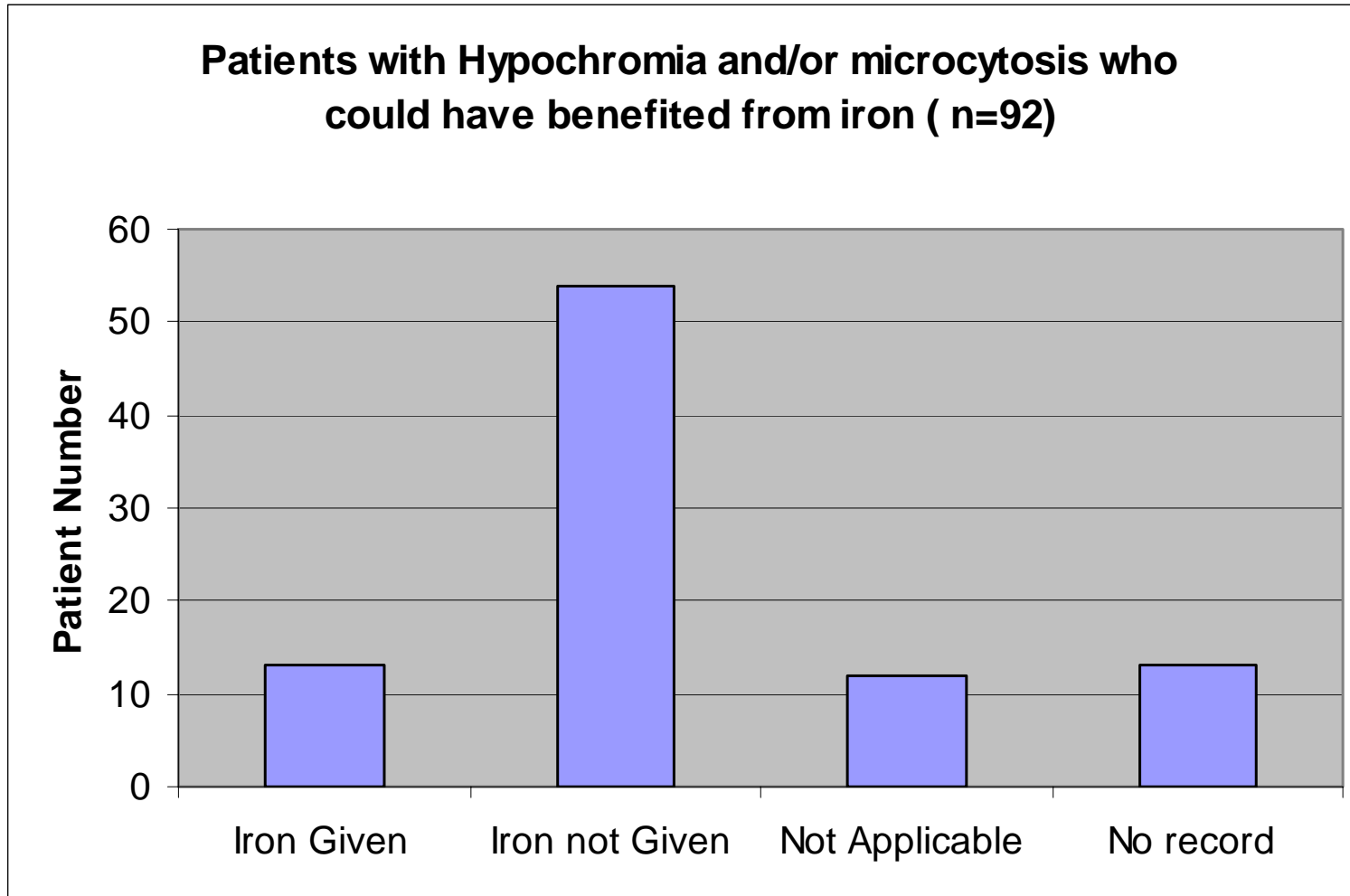
# Interventions to Correct Anaemia



# Iron Deficiency

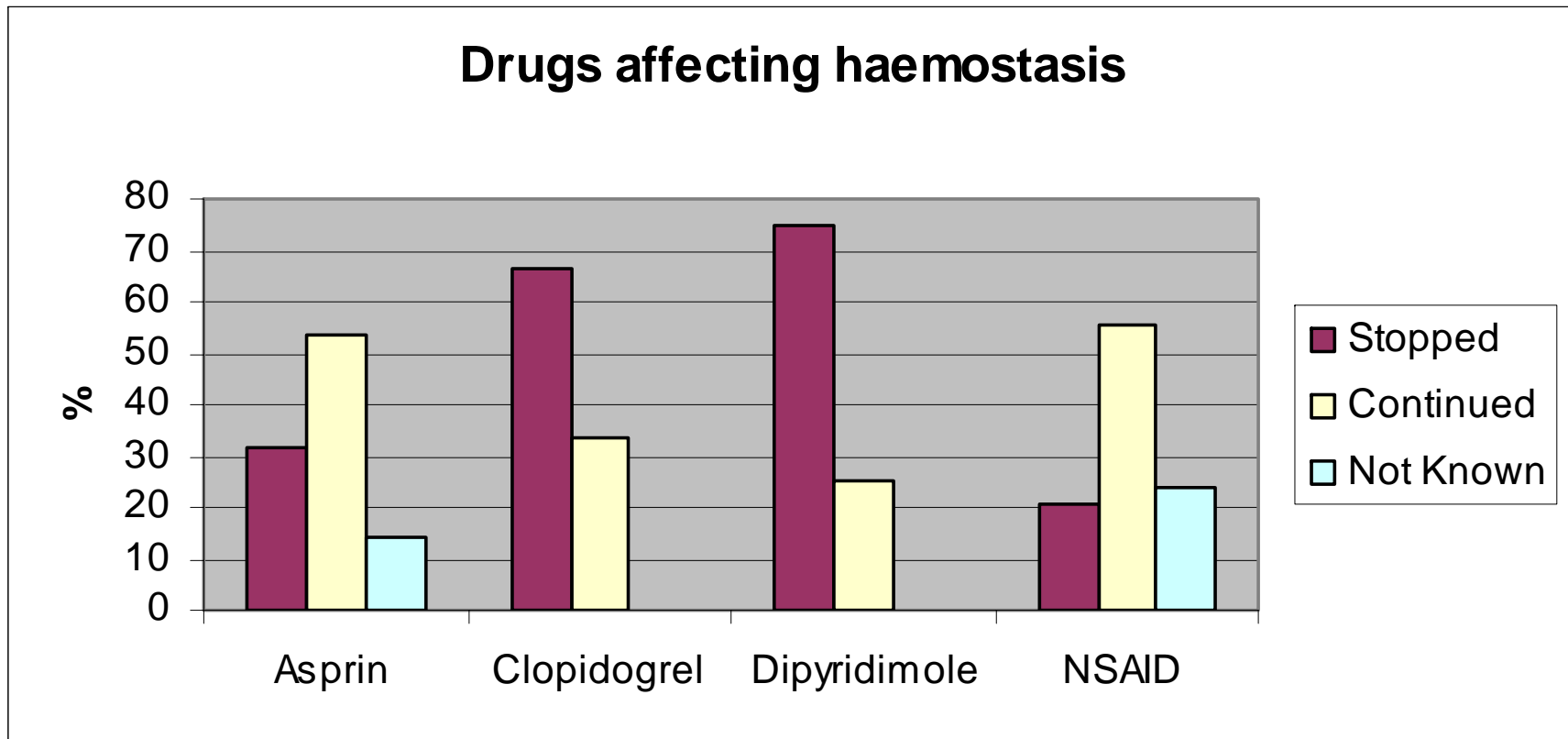


- The most common cause of treatable anaemia in the community is iron deficiency.
- Mean Cell Volume (MCV)  $<80\text{fl}$  (microcytosis) and/or Mean Cell Haemoglobin (MCH)  $<27\text{pg}$  (hypochromia) suggests the possibility of iron deficiency.
- 18% had an MCV of 80fl or below
- 26% had an MCH below 27pg
- 92/387 patients (23.8%) were identified as potentially iron deficient.
  - Hb 4.2 - 12.9      Mean Hb 10.7g/dl

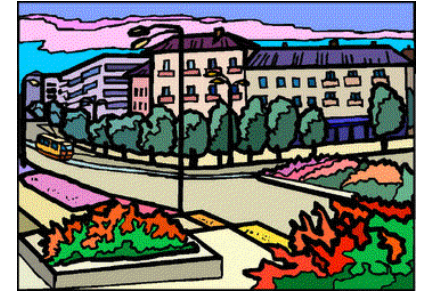


Of the 92 patients who were identified as potentially iron deficient, only 13 (14%) received iron therapy

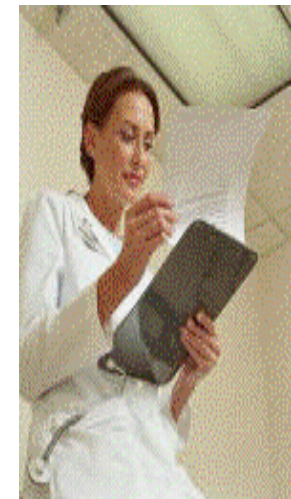
# Drug management



# Conclusions



- More can be done to optimise Hb in POACs
- When action is taken – Hb of 10 is currently often the trigger
- Not enough time is allowed to correct anaemia
- Management of drugs is variable
  - May be good clinical reasons for continuation
- Transfusion preoperatively is rare (1%)
  - Though these may have benefited from iron
  - 11 clinics stated Pre-operative Transfusion



# Guidelines

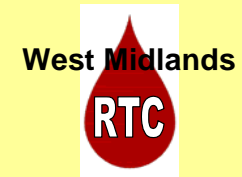
Guidelines for the Management  
of Anaemia  
in Pre-operative Assessment Clinics



# Guidelines for managing anaemia?

- National Good Practice Guidance on Pre-operative Assessment for Inpatient Surgery (NHS modernisation agency)
  - “Refer according to locally agreed guidelines”
- NICE 2002
  - Detailed guidance on investigations
  - No guidance on what to do with results
- British Orthopaedic Association 2005
  - Blood conservation in elective orthopaedic surgery
  - Some guidance on management of anaemia

# Guidelines for the Management of Anaemia in Pre-operative Assessment Clinics



## Draft Guidelines

### Pre-referral

The GP should **identify and treat anaemia before referral** wherever possible



The GP referral **letter must include all relevant clinical information**



# Patient Assessment

↓

Pre-operative assessment should take place **at least 4 weeks prior to surgery**, and ideally immediately following the decision to operate

↓

All patients who are identified as at risk of requiring a blood transfusion should **have FBC assessed at PAC**. These patients should also be given information about the possibility of requiring a blood transfusion

↓

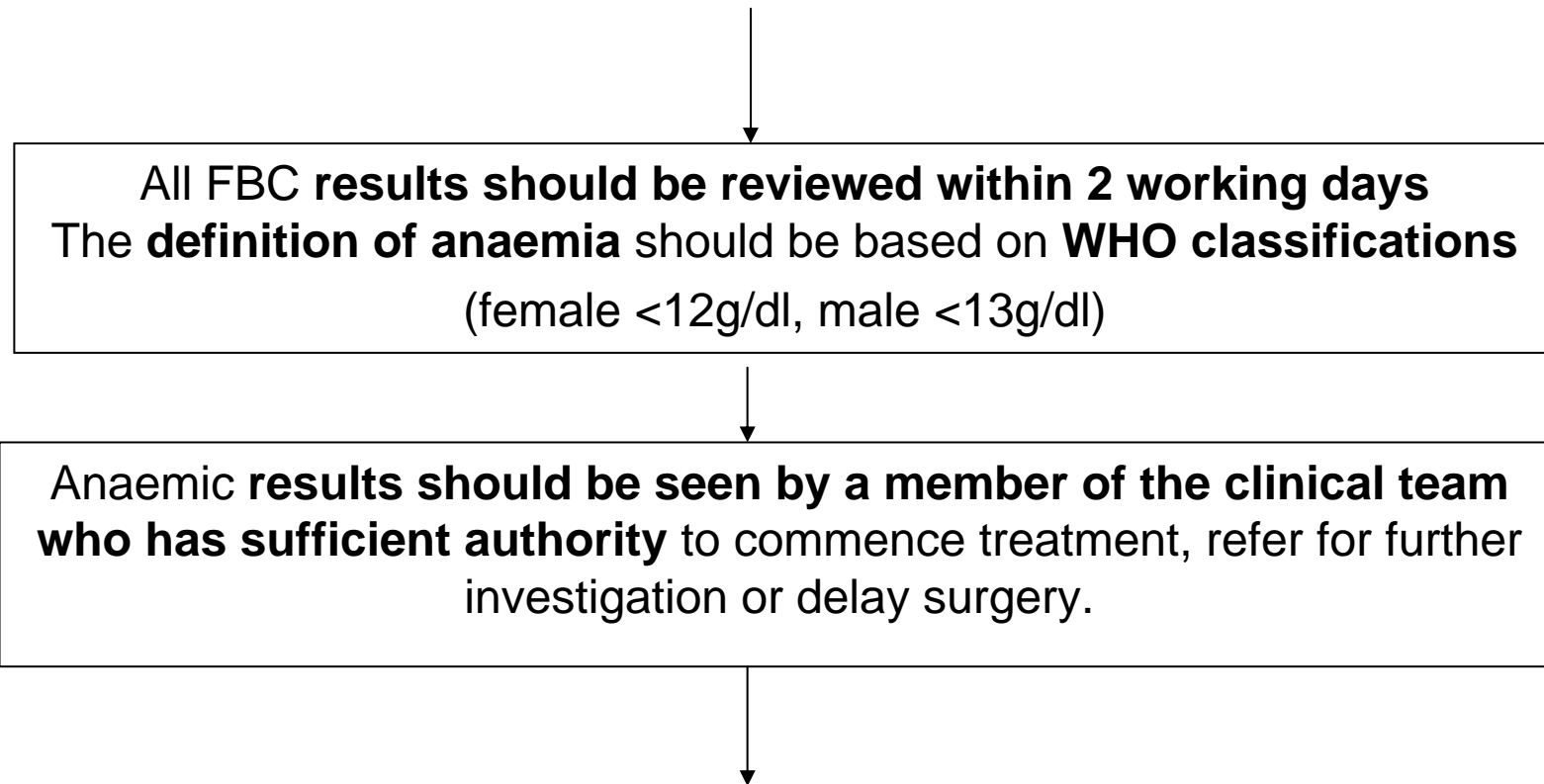
**Point of care testing** should be utilised whenever possible, but all results must be fully documented in the patients notes

↓

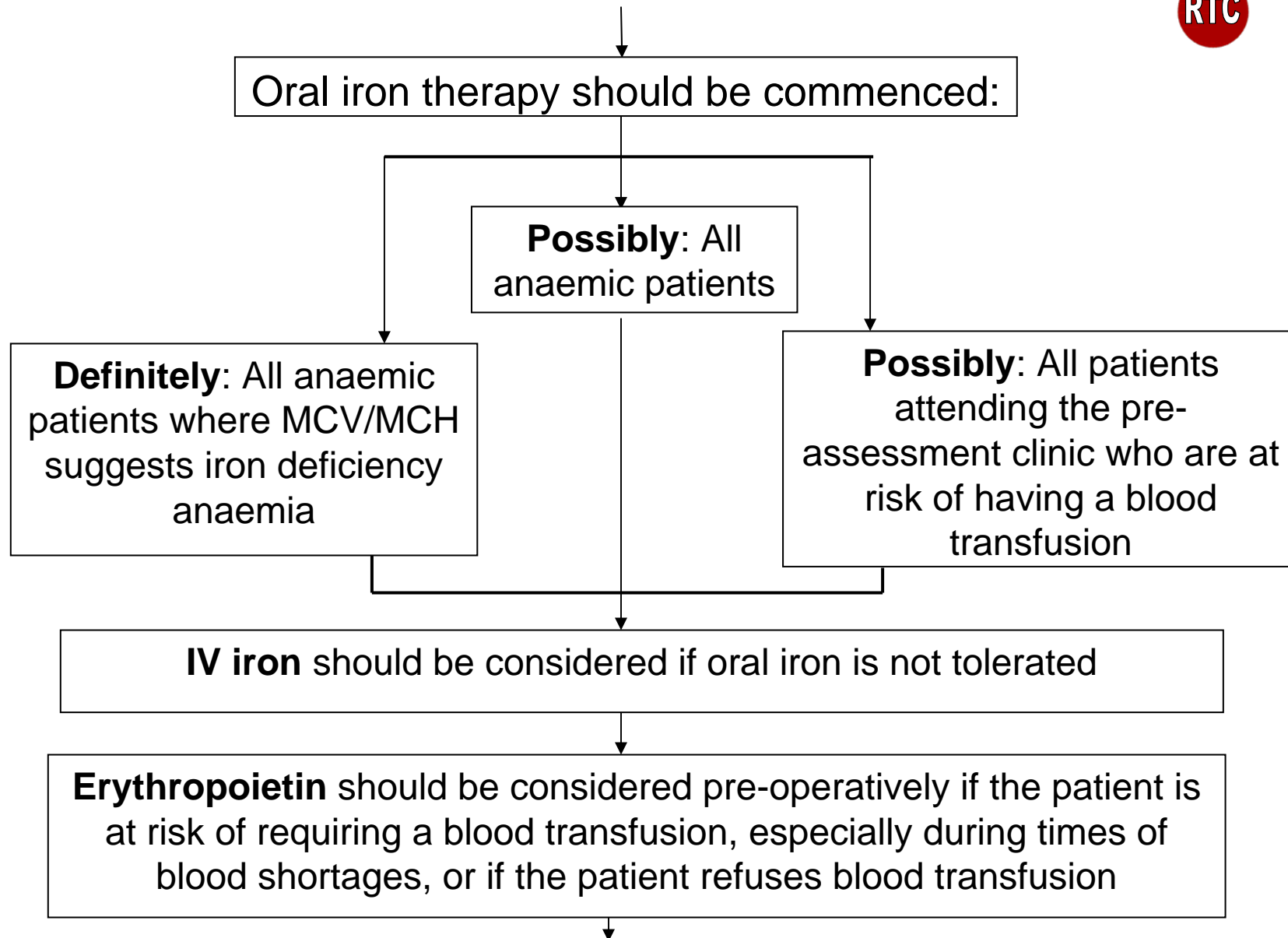
Patients current **medication must be assessed** for drugs that increase blood loss and a decision made regarding cessation

↓

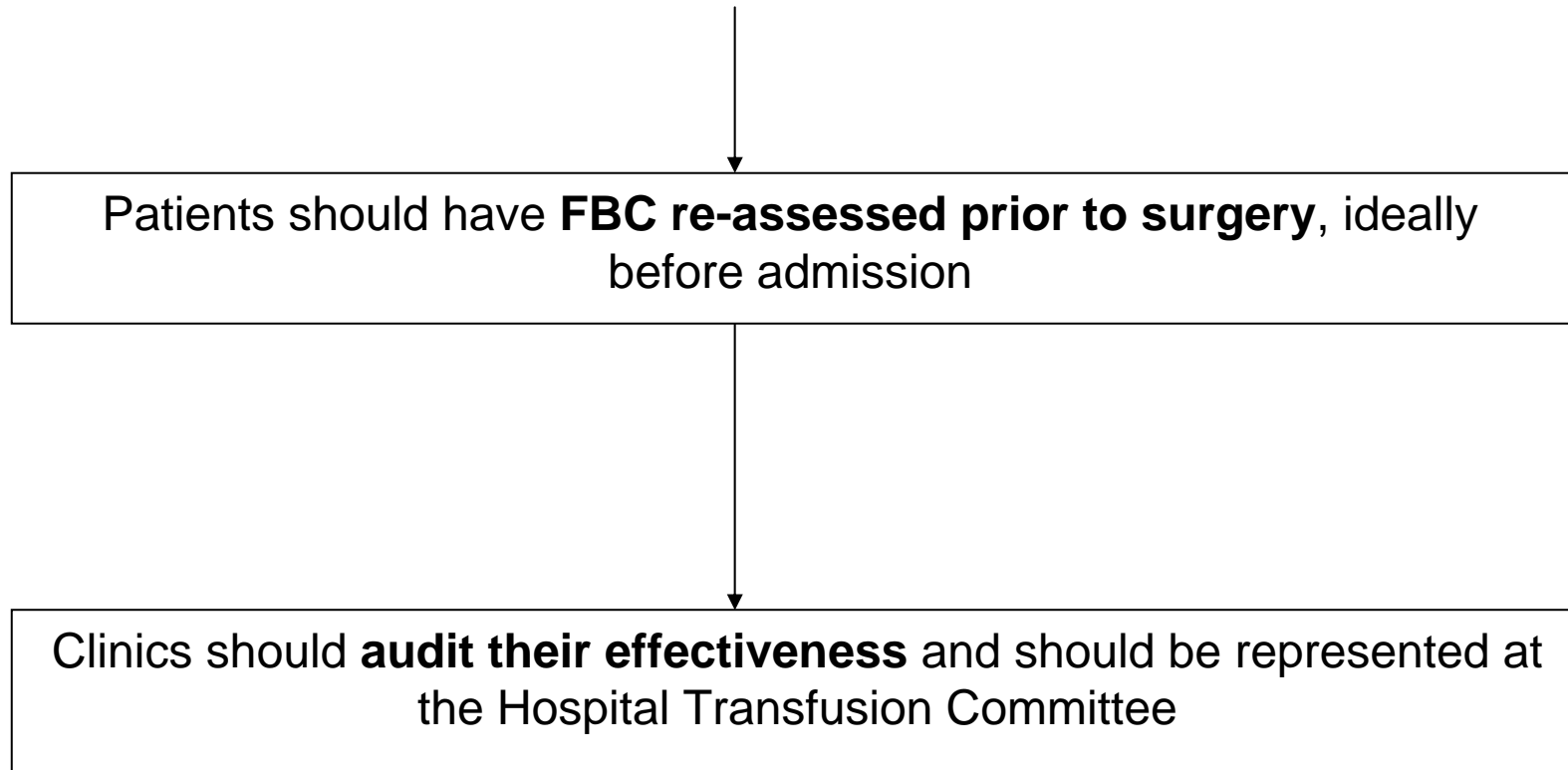
# Results Review



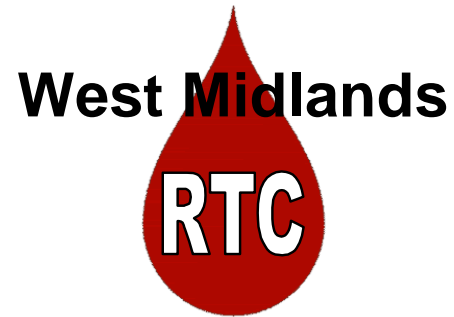
# Treatment



# Reassessment







**[www.transfusionguidelines.org.uk](http://www.transfusionguidelines.org.uk)**

Click on 'Regional Transfusion Committees' /  
'West Midlands Transfusion Committee'



West Midlands Regional Transfusion Committee