

Blood Transfusions in Elective Knee and Hip Operations from January 2012-June 2012

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Introduction (1)

- To increase O₂ carrying capacity of blood
- Decision to transfuse based on assessment of clinical state and haemoglobin

Introduction (2)

Concerns about **safety** of transfusion

- **Infectious**

- HIV 1 in 8,000,000
- Heb B 1 in 9,000,000
- Hep C 1 in 30,000,000
- Bacterial infection

- **Non-infectious**

- Human errors
- TRALI
- Immunomodulation

- **Theoretical risk of vCJD**

- 4 cases (3 developed clinical signs) – transfused 96/97 & latest 2002
- None since 2006.

Previous Audit 2009-2010 - methodology

- Blood transfusion in primary hip and knee replacements (1st **Sept** 09 – 30 **Nov** 09)
- GH VSLGH
- **469** patients

Previous Audit 2009-2010 - results

- **Transfusion rate** at GH 3.2% vs 12.35% at LGH (average 7.78%)
- Average **preoperative Hb** 11.7
- Average pretransfusion Hb 7.7
- 21/41 **anaemic preoperatively**
 - Received **52/97** units
- 23 appropriate, **1 inappropriate**, 17 unable to comment

Aims

- Since then **moved** all elective to LGH
- Assess if improvement of transfusion rates over previous years
- Appropriateness of transfusions
- Appropriate preoperative optimisation

Methodology

- THR/TKR **coding** office – **1085pt**
- **Blood transfusions** under the orthopaedic consultants.
- **Cross-analysed** the lists – **54pt**
- Assess transfusion – **UHL guidelines**

Results – Transfusion rate

- Overall **5%**transfusion rate
- Previously 12.35%at LGH

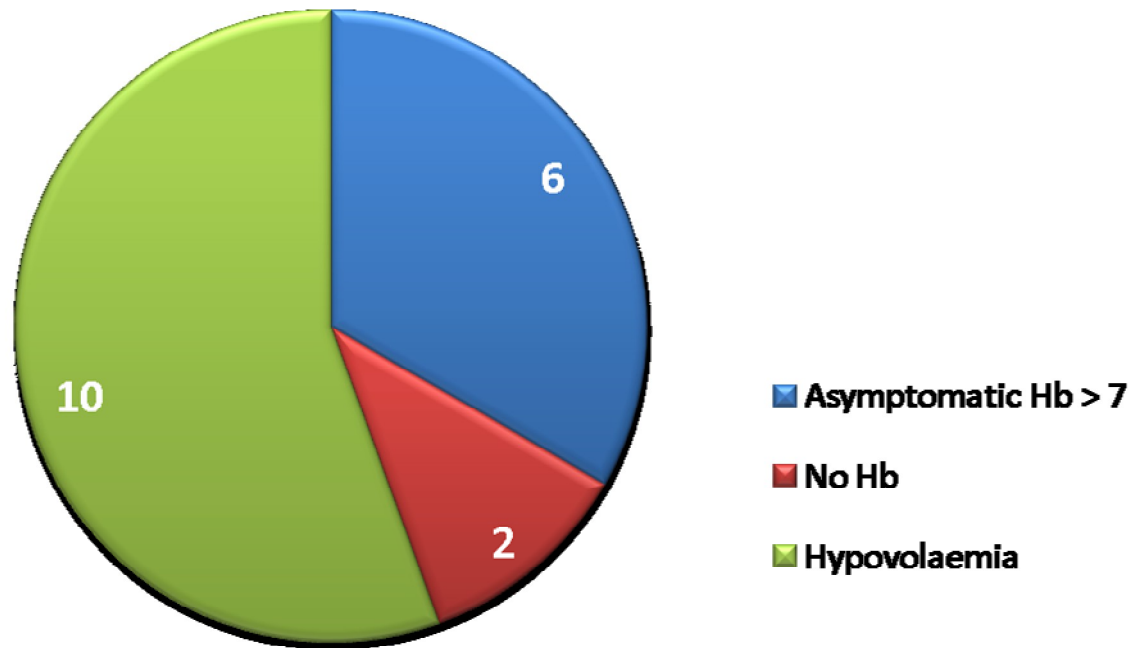
Results – Appropriateness (1)

Based on UHL guidelines

- Hb **> 10** g/dL – no transfusion
- Hb **< 7** g/dL – transfuse 2 units
 - Maintain Hb 8-9
 - Hb 9-10 in elderly & IHD;
- Hb **7-8**, pt stable – only if clearly symptomatic from anaemia

Results – Appropriateness (2)

- **Inappropriate (18)**
- **Appropriate (36)**



Results – Preoperative Hb (1)

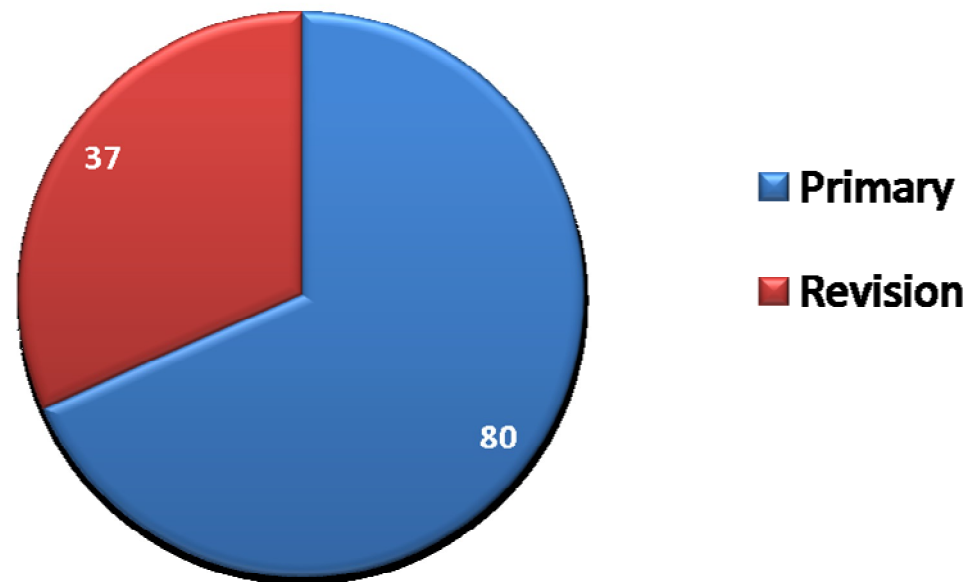
- Anaemia defined as **haemoglobin**
 - **M** < 13
 - **F** < 11.5

Results – Preoperative Hb (2)

- **43% total anaemic (23/ 54)**
 - **41.6% primary's**
 - 44.4% revision's anaemic
- Average Preoperative Hb **12.2**

Results – Units transfused (1)

- **TOTAL – 117**
- **53 units to anaemic preoperative**
- **Average units – 2.17 / pt**



Results – Units transfused (2)

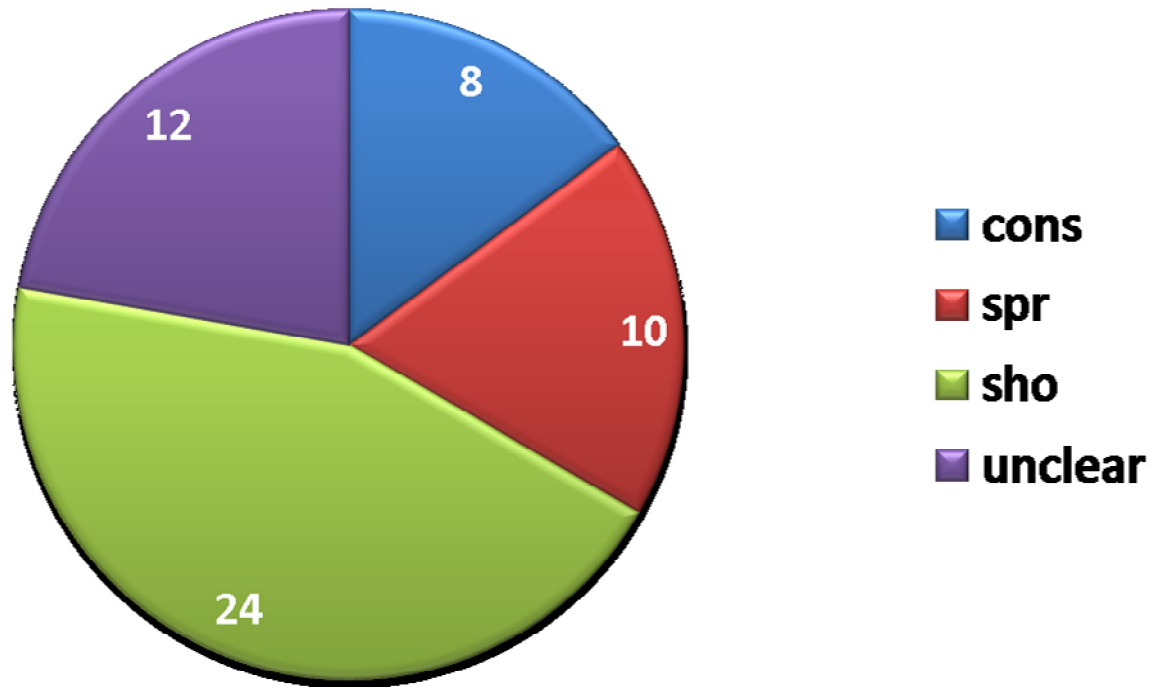
- Total inappropriate units – **37**
- **8 to revisions/ 29 to primary**

Results – Pretransfusion Hb

- Average pretransfusion Hb was **7.91**
- **6** cases did not have a pretransfusion Hb
 - 5 were revisions
 - Of these 3 were inappropriate

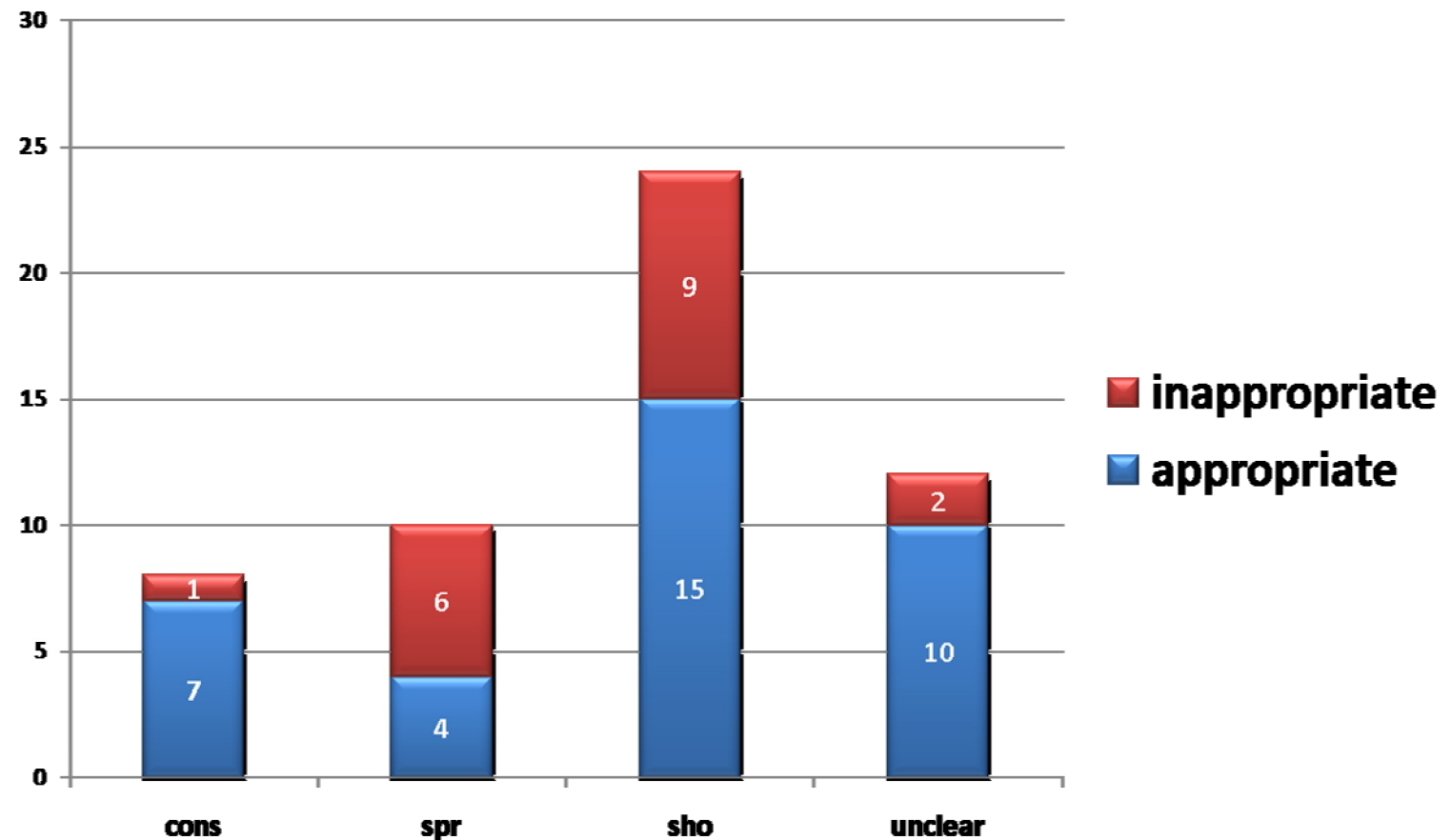
Results – Decision Makers (1)

- Mainly **SHO**

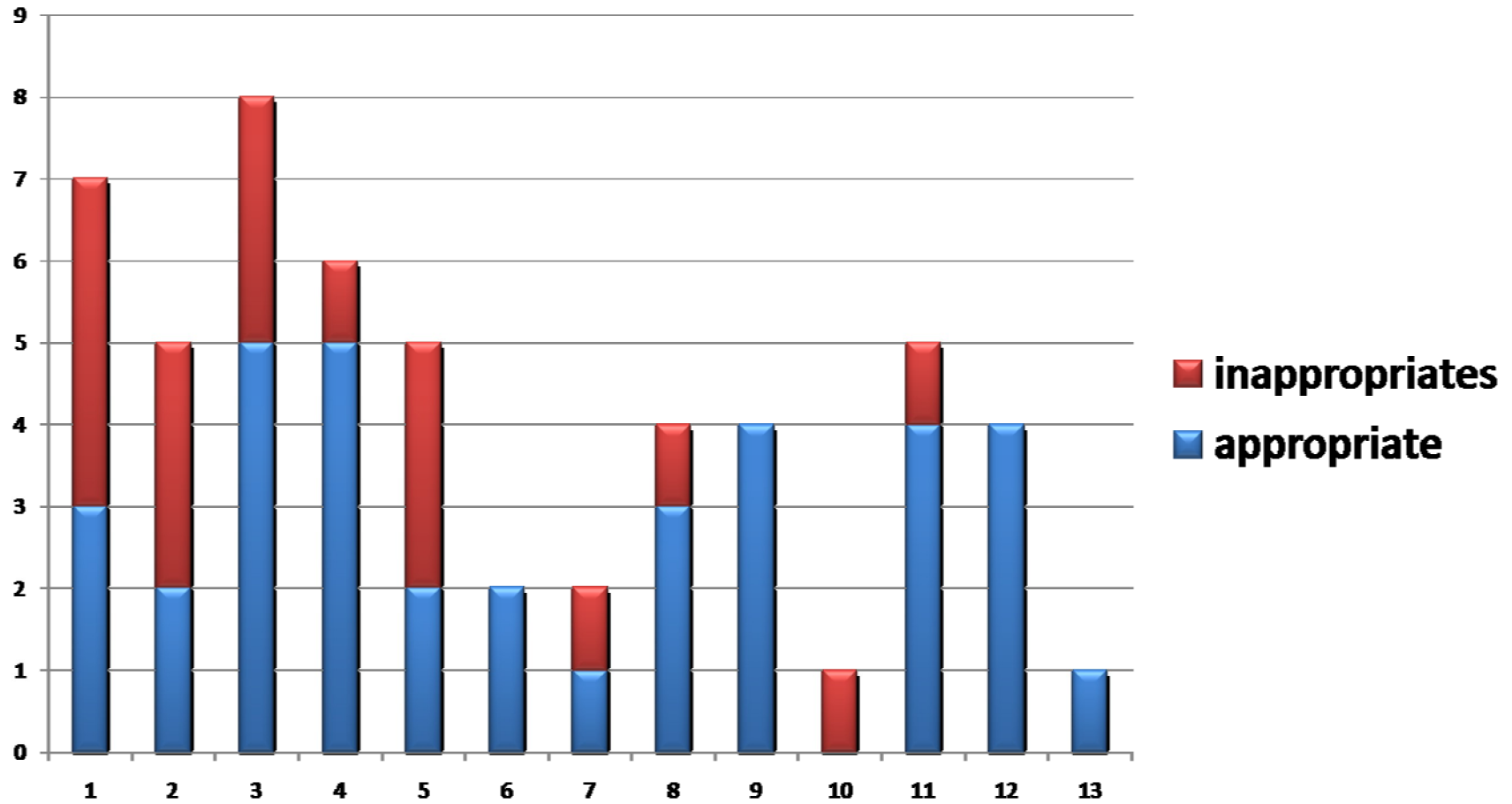


Results – Decision Makers (2)

- **SpR highest inappropriate – 60%**



Results – By Consultant



Conclusion (1)

- **Generally improvement** over previous year in transfusion rates. **5% v 7.78%**
- Still some **unclear documentation**

Conclusion (2)

- **Almost 50%** of transfused **anaemic preop**
 - None of the primary ones were optimised pre-op

Hb >13 preop = 15.3x less likely to need transfusion (Salido et al, 2002)

Conclusion (3)

- **18 inappropriate** – 37 units
 - hypovolemic shock / asymptomatic Hb >7
- Price of 1x RBC £122.09 ea → **£4517.33**
- Increased risk of adverse effects

Interventions

- **Education**
- Hierarchical decision process
- Better pre-op **optimisation** of anaemic patients