

Blood product transfusion in paediatric haem-oncology patients on Kamran's ward:

Local re-audit of the National Red Cell Audit (including platelet transfusion)

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National comparative audit for blood transfusion

- September-November 2009
- Paediatric and neonatal practice
- 141 sites, N=1302 patients (excluding neonates) and episodes ??(1st transfusion only)
- Transfusion policies in 68% of units
- Haematology/oncology children one of the largest groups
- 95% indications documented
- Pre-transfusion Hb testing 96% (Oxford 95%),
- Post-transfusion Hb testing 82% (Oxford 90%)
- Volume to be transfused prescribed in mls: <60% (Oxford >40%)
- Volume to be transfused prescribed in units: <40% (Oxford <60%)
- Local policy to guide prescribers when acceptable to prescribe blood transfusions in units
- Education and training of staff in safe prescribing and administration of blood

JRH transfusion guidelines: packed red cells

- Based on BCSH guidelines
- Thresholds for transfusion in haem-oncology patients: 7-8g/dl or higher if symptomatic.
- Pre-transfusion Hb and indication for transfusion should be clearly documented in notes.
- Amount to be transfused (in mls): $\text{Weight (in kg)} \times 4 \times \text{desired rise in Hb, over 3-4 hours}$
- 20ml/kg will increase Hb by 4g
- Transfusion rates no faster than 5ml/kg/hr, except for acute haemorrhage/resuscitation)
- Prescription should be in mls unless >15kg when 'units' can be used (each unit 230-300mls)
- Prescriptions should have a signature and bleep number.

JRH transfusion guidelines: platelets

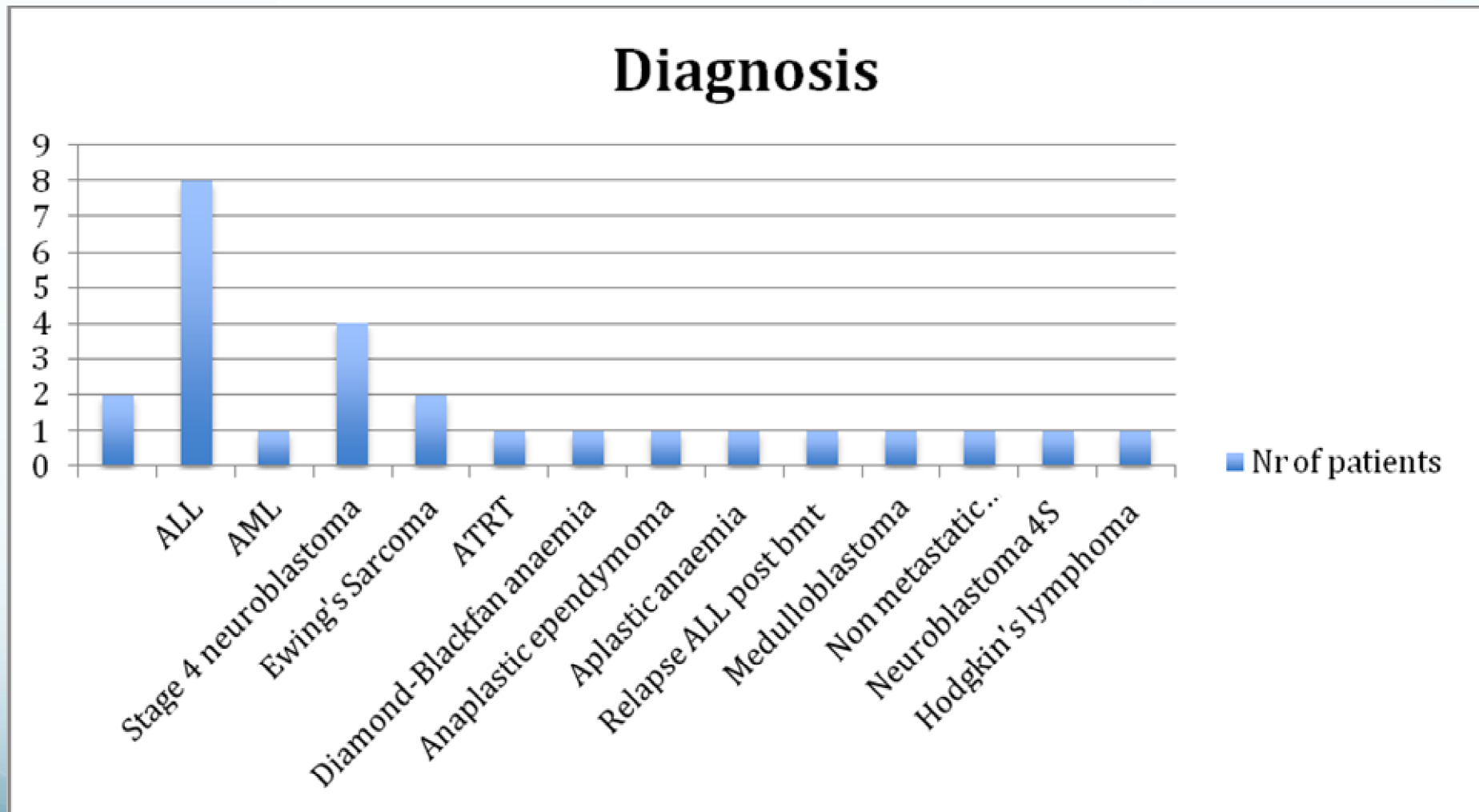
- Prescription should be in mls and the blood bank will issue the most appropriate sized unit (1 adult unit is around 200mls)
- Dose 20ml/kg over 30 minutes
- If child is >15kg, 1 adult unit can be prescribed.
- Transfusion thresholds in haem-oncology patients:
- <10 if well and not bleeding,
- >10-20, if bleeding or pre-procedure (for e.g. >50 for lumbar puncture)

Our audit

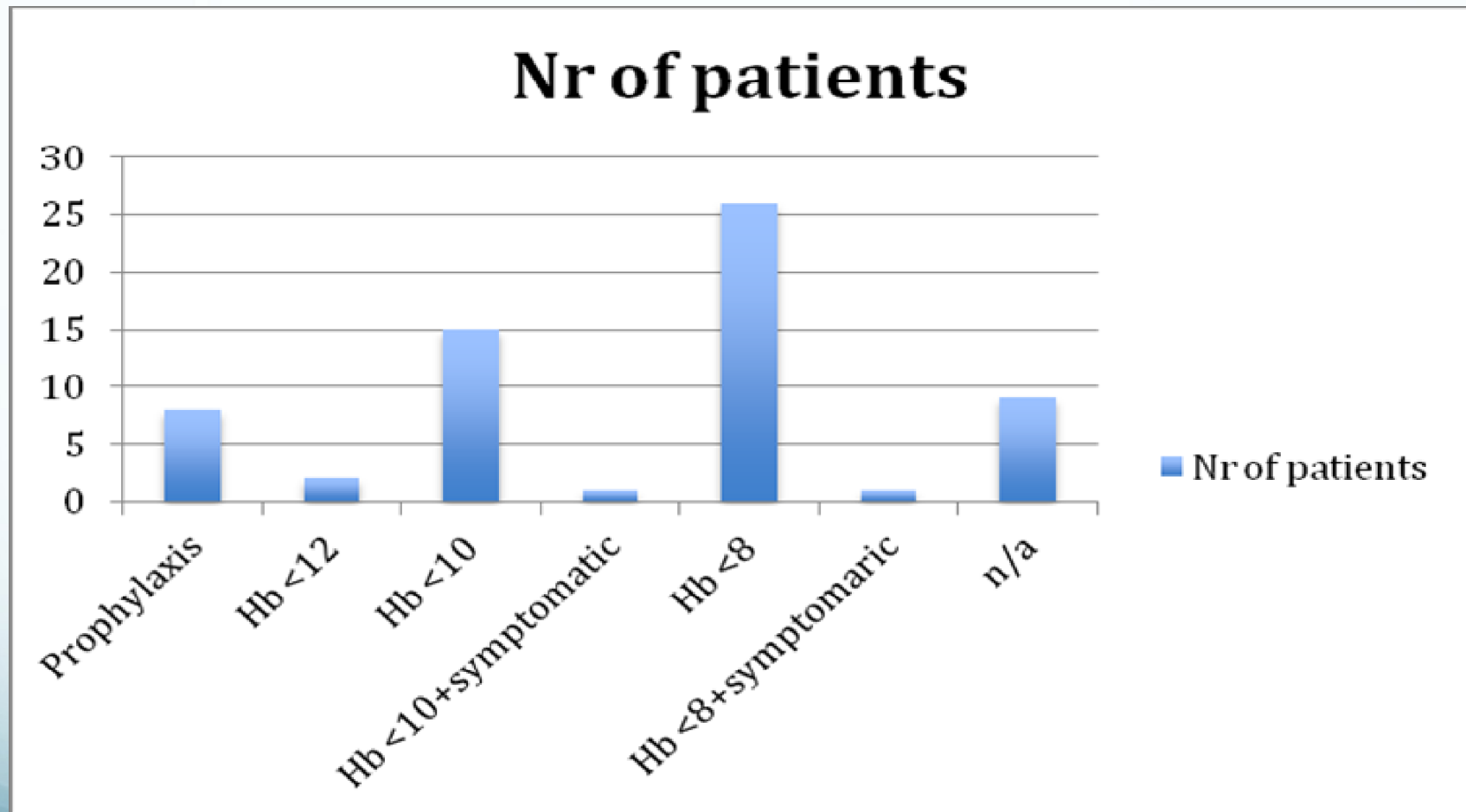
- Retrospective: Data from patients transfused October to December 2010
- Age range 1- 18 years of age
- Data collected on patients transfused on Kamran's ward (haem/onc ward) at the John Radcliffe Hospital
- Total number of transfusions issued by the blood bank:

N=101 (62 rbc + 39 plts)
- Total number of patients: 26
- Notes and Drug charts were looked at retrospectively

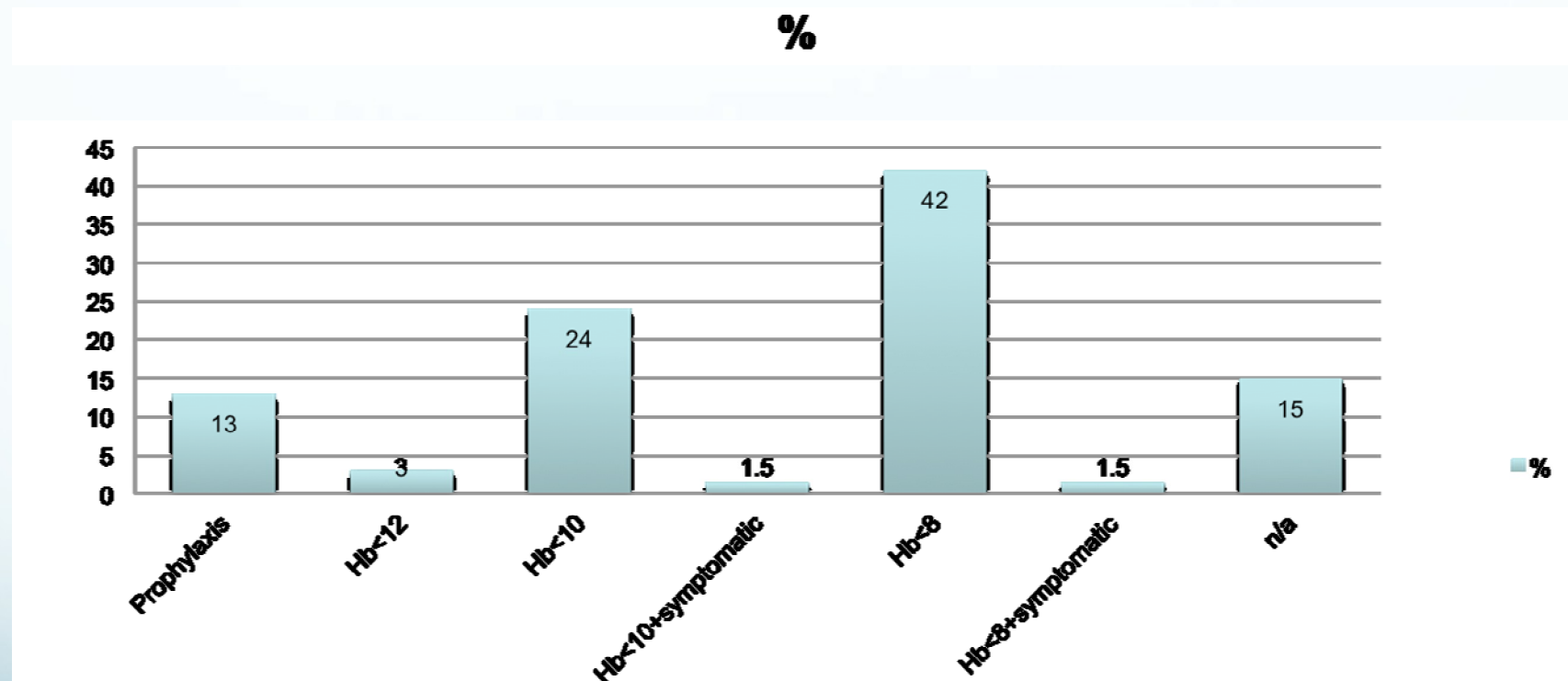
Range of diagnoses



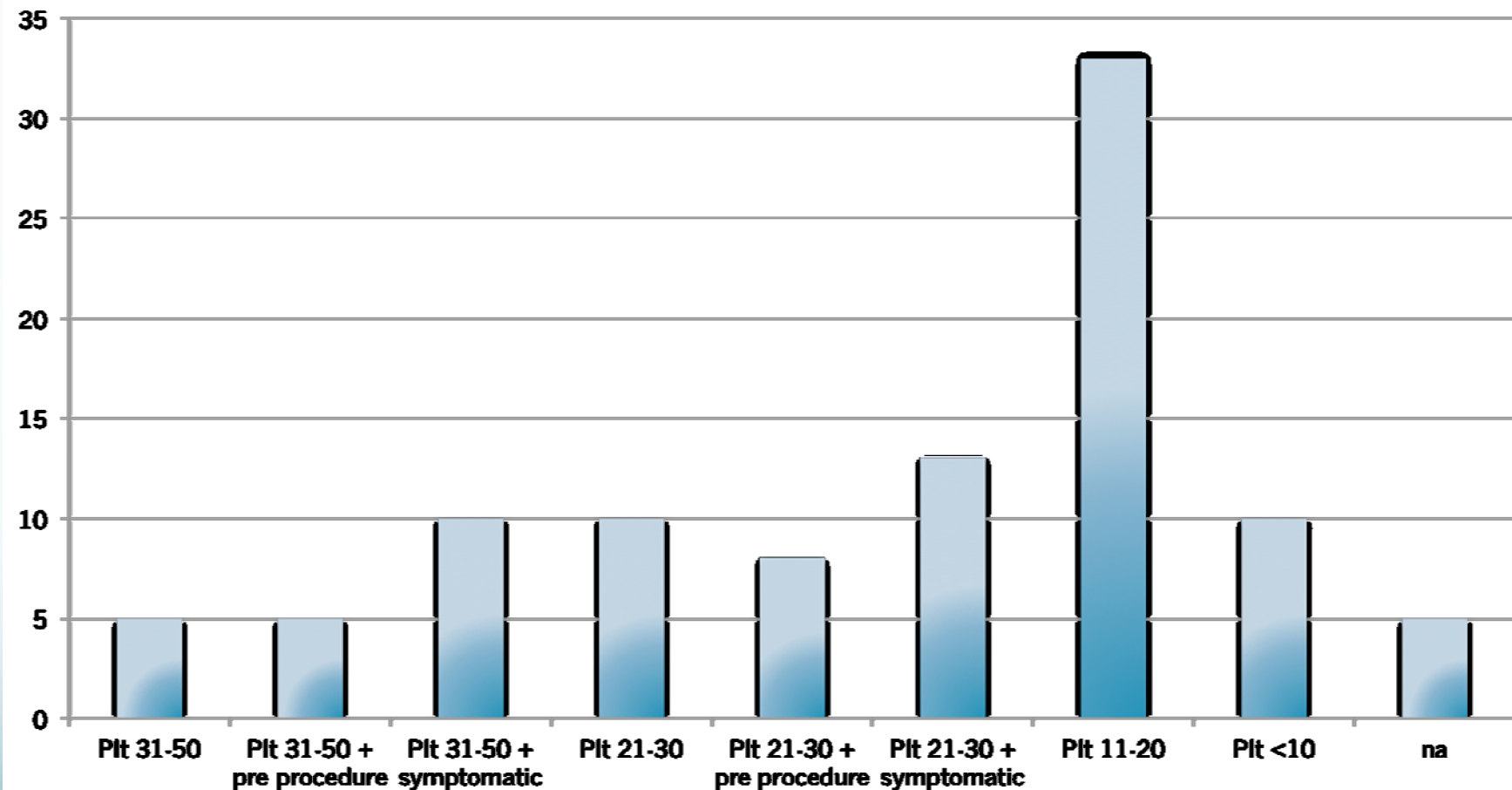
Thresholds for transfusion: Packed Red Cells n=62



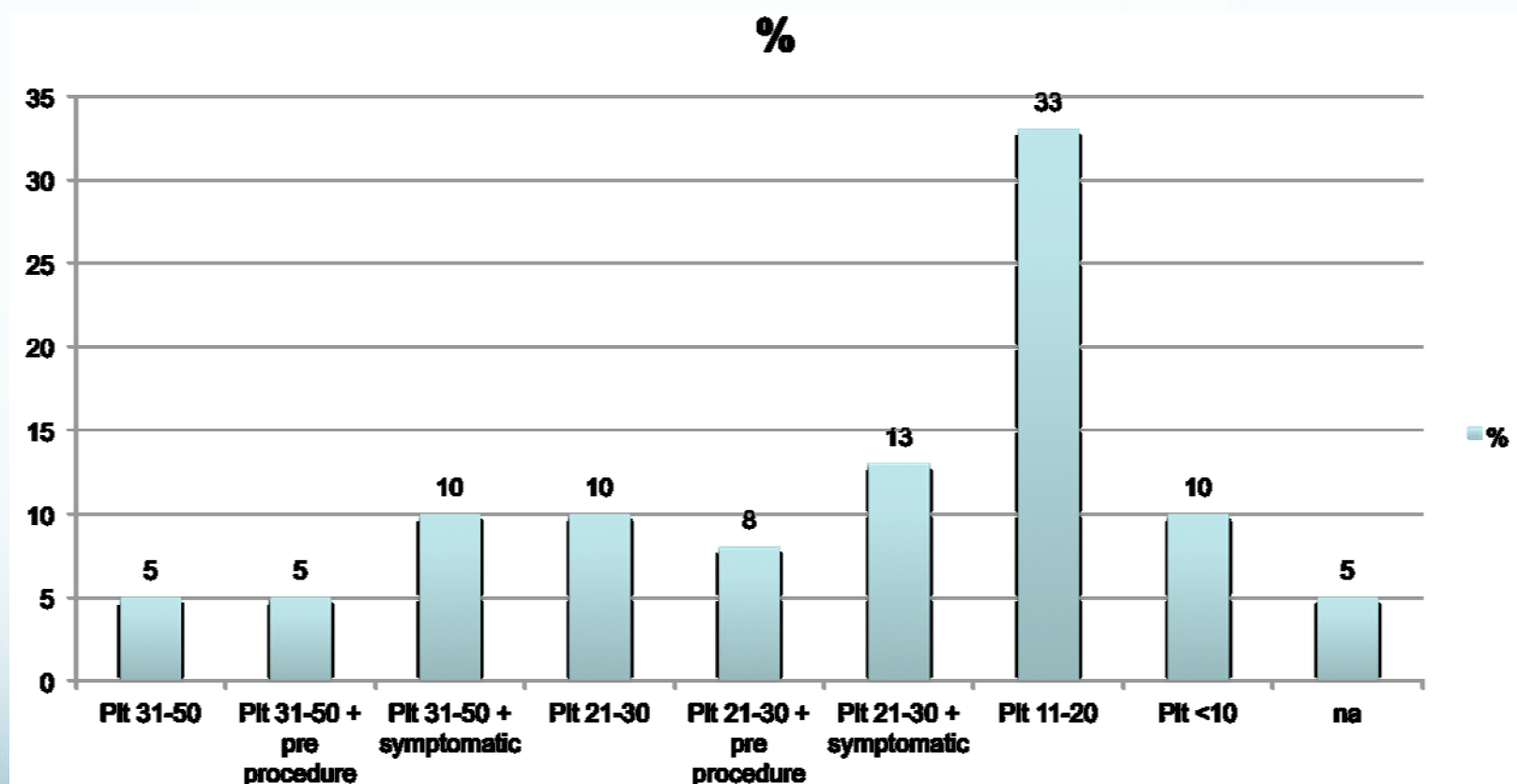
Thresholds for transfusion: Packed Red Cells n=62



Thresholds for transfusion: Platelets n=39



Thresholds for transfusion: Platlets n=39



Results:

- A pre transfusion Hb or platelet count was documented in 89% of cases (90/101)
- A post transfusion Hb or or platelet count was documented in 35% (35/101)
- The intention rather than the indication for transfusion was stated in the notes in 74% of cases (75/101 transfusions)

Results:

CMV and Irradiated products

- Packed Red cells
- CMV negative: Yes: 14, No: 37, n/a: 11
- Irradiated: Yes: 18. No: 33, n/a: 11
- 2 units of irradiated packed cells given when not required -3% each
- Rest rightly prescribed (97%)

- Platelets:
- CMV negative: Yes: 21, No: 15, n/a: 3
- Irradiated: Yes: 22, No: 13, n/a: 4
- Rightly prescribed-100%

Results:

Prescriptions-packed red cells

- 11 cases-no prescription chart available (18%)
- 51 prescriptions for packed red cells transfusion (82%)
- In 13/51 (25 %) the volume was prescribed in mls & 26/51 (75%) prescribed in units-appropriate

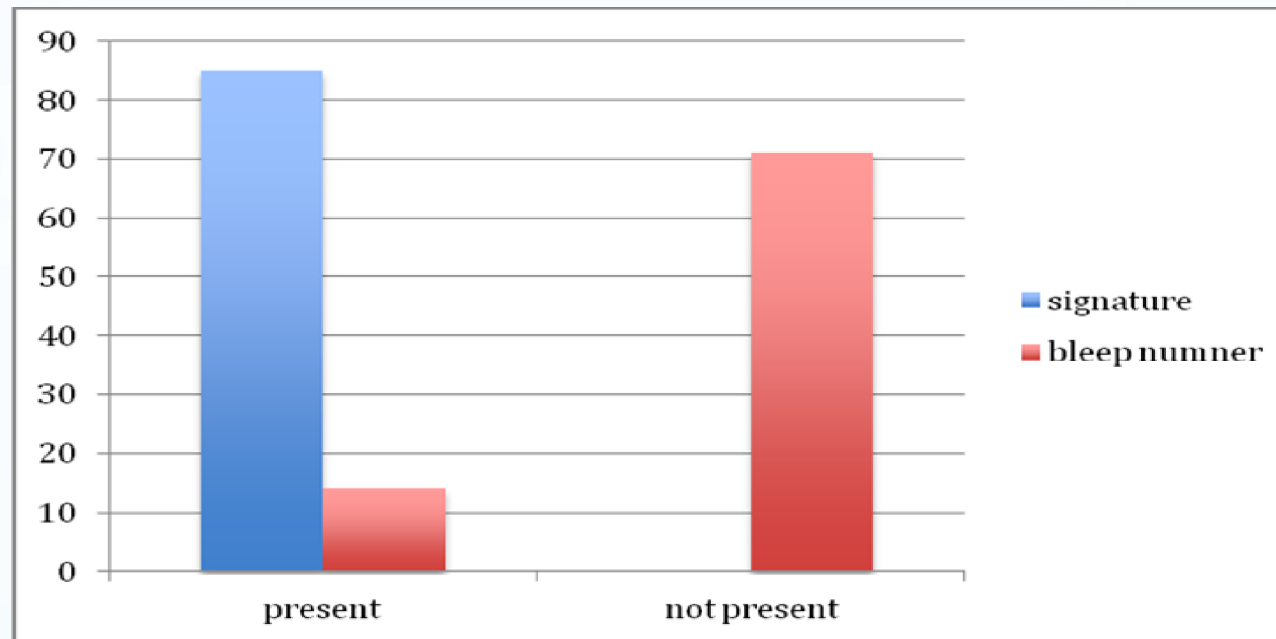
(At the JR a unit varies in volume from 220-340mls)

Results:

Prescriptions-platelets

- Out of the 39 platelets transfusion ordered of the blood bank, 35 prescriptions were available for analysis (97%)
- **Volume:** At the JR a unit varies in volume from 220-340mls
 - 3 products were prescribed in mls (9%)
 - 26 products as pools (74%)
 - 2 products in packs (6%)
 - 4 products in units (11%)
- **Rate:**
 - 100% were over 30 minutes
- **Complications:**
 - 2x complications documented
 - Transfusion completed without issues after piriton

Result: Signatures and bleep numbers



- 16/101 prescription charts not available for analysis (16%)
- In all 85 cases, signature of prescriber was present -100%
- Bleep number in 14/85 cases-16%

Conclusions

Packed Red cells

- Transfusion thresholds: <8: 44%; Hb 8-10: 40%; Hb 10-12: 2%
- Indications not documented in 26% of cases
- Volumes (in both mls and units) appropriately prescribed.
- Rate of transfusion: 100% conformation

Platelets

- Transfusion thresholds--<10: 10%; 11 to 20: 33%; >20: 51%
- >20-pre-procedure 22%, symptomatic 78%
- Platelet volumes varied-mls/pools/packs/units.
- Volumes appropriately prescribed.
- Rate of transfusion:100%

Conclusions

All prescriptions

- Signatures present: 100%
- Bleep numbers present; 16%

Recommendations

- Continue to use currently recommended thresholds
- Document reason if transfusion deviates from current guidelines
- Poster on ward
- Re-audit practice

Transfusion Thresholds for Paediatric Haem / Onc Patients

Transfusion practice according to the ORH document "Guidelines for the use of special blood components in paediatric haematology/oncology", which can be found on the intranet through the "Paediatrics Haematology and Oncology" pages under "Blood Transfusion".

Always document reasons for transfusion.

Red Cells: Top-up transfusion trigger (if asymptomatic) Hb 7-8 g/dl

Prescribe and request in mls until child >15kg
15-20ml/kg will give a predicted 4-5g/dl rise in Hb
Transfusion rate for a top-up should not exceed 5ml/kg/hr
Transfusion of each unit must not exceed 4 hours
Using complete units allows maximum benefit from each donor exposure and avoids waste

Platelets: Prophylactic platelet transfusion trigger Plt $<10 \times 10^9/l$ If febrile Plt $<20 \times 10^9/l$

Prescribe and request in mls until child >15kg
Usual dose 20ml/kg over 30 minutes
A single adult therapeutic dose (ATD) of platelets is sufficient for children >15kg
This threshold does not apply in patients with active bleeding

THANK YOU

Any Questions???