MANAGING ANAEMIA WITH *IV* IRON – HOW IT WORKS IN PRACTICE

Jill Ablett, Consultant Obstetrician, RBH

September 2014

What I am going to talk about this morning

- Antenatal management of anaemia
- Postnatal management of anaemia
- Massive Obstetric Haemorrhage
- *iv* iron

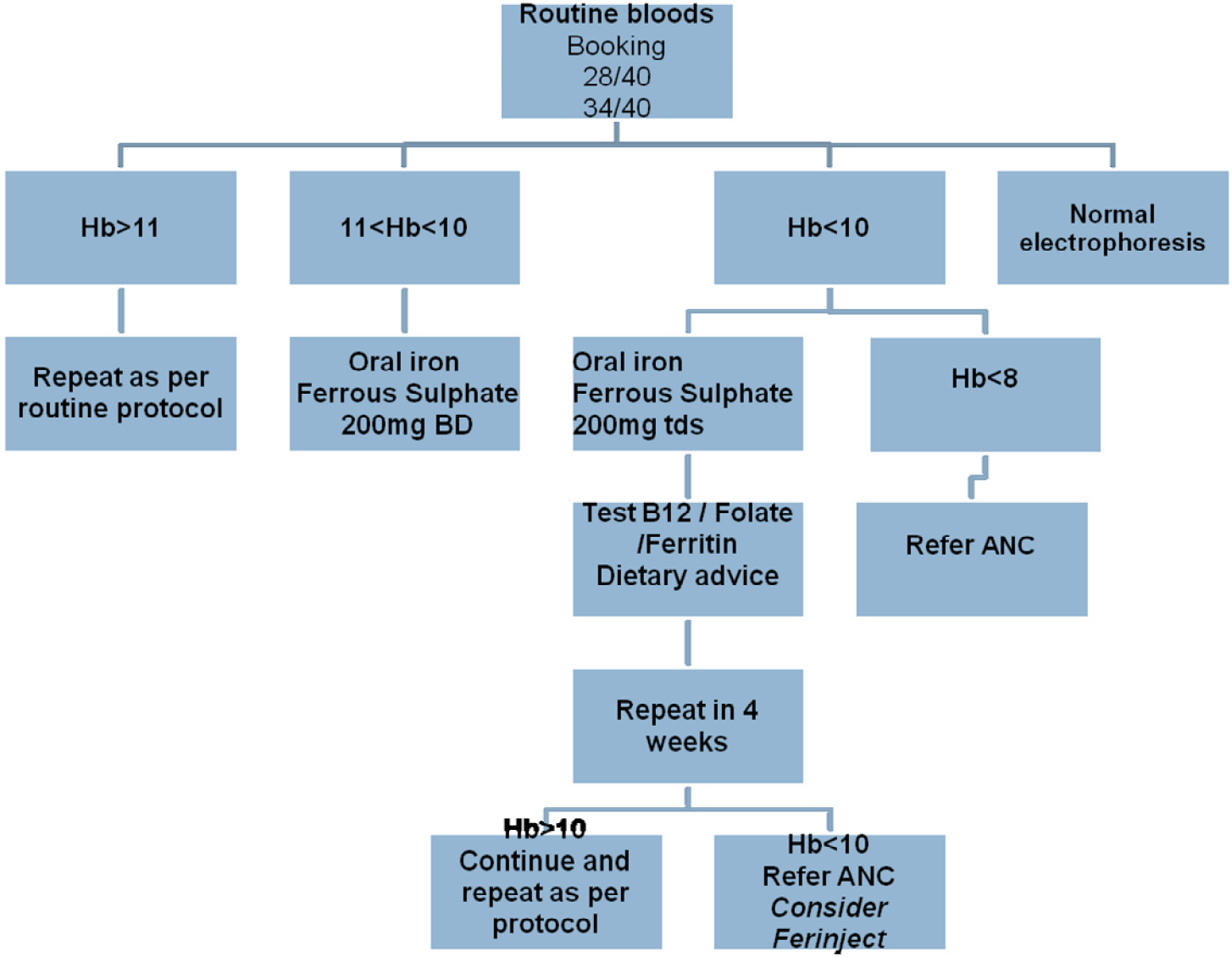
Antenatal management

- All women have Haemoglobin (Hb) and electrophoresis at booking
- Bloods repeated at 28 and 34 weeks
- Low Hb (11.0g/ dl first trimester, 10.5 thereafter) – oral iron
- Refer to consultant clinic if Hb < 10
- Ferritin, B12, Folate, repeat FBC
- Decide on management plan

Antenatal managment

- *iv* iron if proper dose oral iron ineffective after 2 weeks adequate therapy
- Not tolerated – side effects, poor absorption
- Urgent need for correction – late gestation
- Normal electrophoresis
- Correct B12, folate deficiencies

Antenatal Management



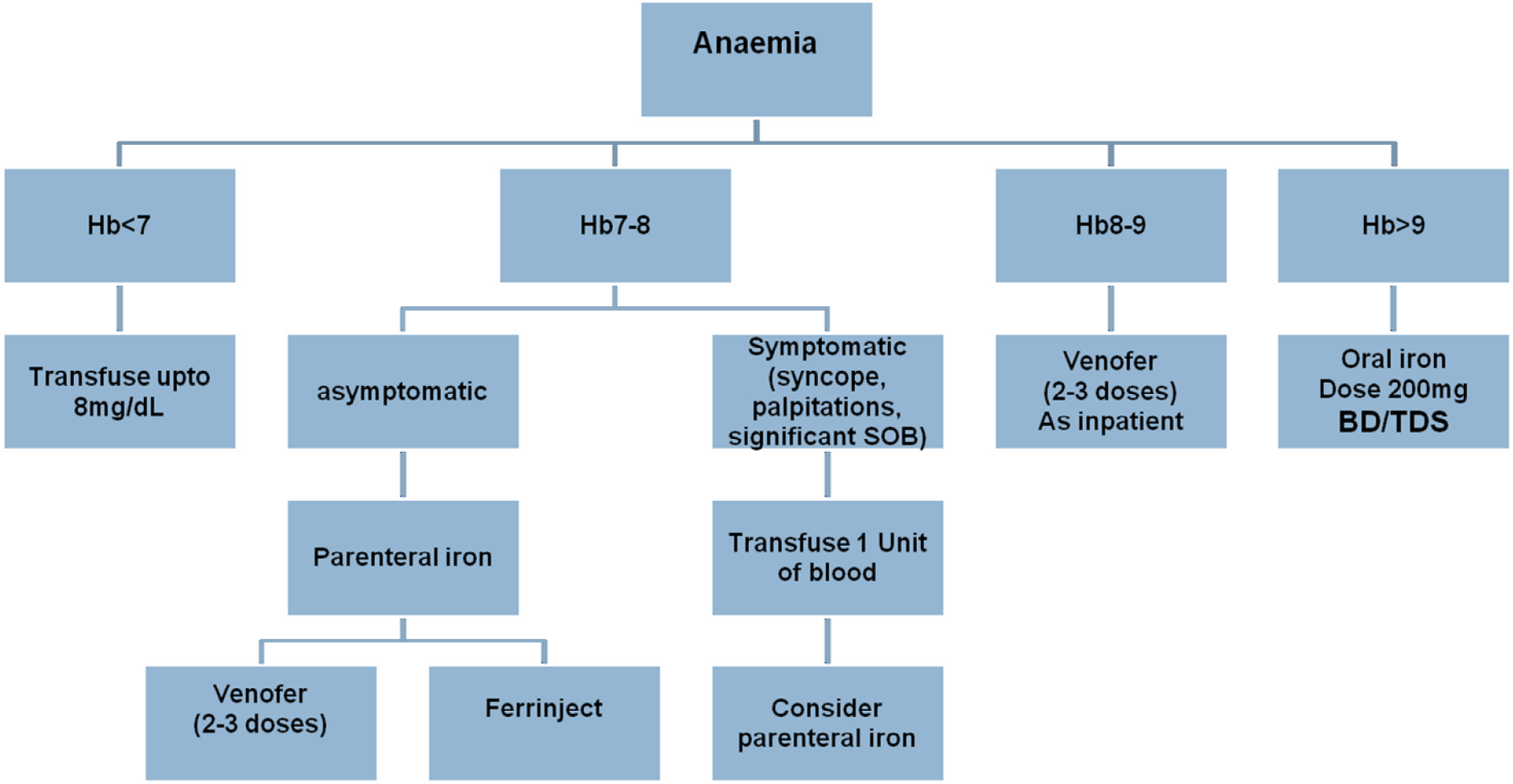
Delivery and postnatal

- Check FBC on arrival in labour if Hx anaemia
- If Hb < 10 – insert *iv* cannula, Group and Save blood or cross match
- If Hb > 10 – low risk
- Check FBC if LSCS, PPH, manual removal of placenta, 3rd degree tear
- Oral iron, iv iron, Blood transfusion

Recommendations

- If symptomatic and Hb < 80g/l, transfuse. Aim to increase Hb to 80g/l only (1 unit is OK)
- If post natal Hb > 70 g/l and patient asymptomatic and not at significant risk of further haemorrhage, consider Venofer/ Ferinject
- If post transfusion Hb > 80 g/l and well, consider Venofer/ Ferinject
- If Hb > 90 g/l and well, for oral iron. If symptomatic, consider Venofer/ Ferinject, rather than transfusion

Post Natal management



Administration

Day Assessment = outpatient

Also on antenatal , labour and post natal wards

Calculate dose = weight (target Hb - actual Hb) x 0.24 + 500mg (replenish stores)

Venofer- 200ml in 100ml over 1 hour. Up to 3 doses per week alternate days. Sequential days post natal

Ferinject up to 1000mg in 50 ml over 15 mins

Up to 1000mg per week

Which iv iron product?

- Venofer since 2004 for in patient and out patients, both antenatal and post natal
- Ferinject introduced in 2008, data from 2009
- **Antenatal** - use Ferinject – usually only 1 visit – less midwife time, DAU space, better for patient
- **Postnatal** - mostly use Venofer
- Usually 2 doses only required, consecutive days
- Ferinject only if facilitating discharge post natal
  - Midwife checks Hb in community Day 10

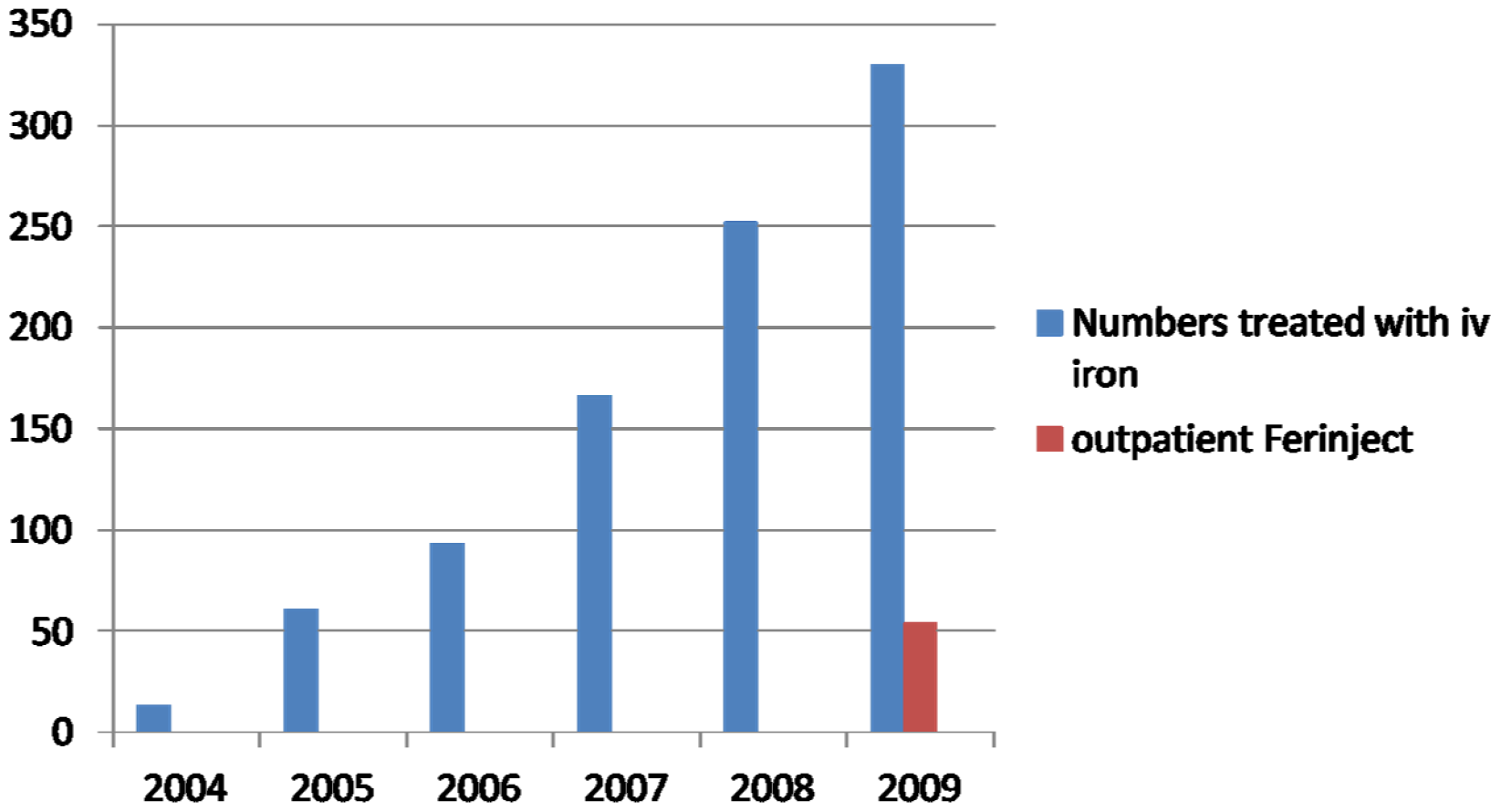
Cost comparison *iv* iron *v* blood

	Transfusion	Cosmofer®	Ferinject®
Cost per unit dose	£123 per unit	£39:85 per 500mg £7.97 per 100mg	£95:50 per 500 mg
Cost per Treatment for 70 Kg patient	£246 (2 units)	£103.61 18mg/Kg maximum	£191 (1000 mg maximum)
Crossmatching Costs	£25	N/A	N/A
Additional Costs	Cannula / giving set	Cannula / giving set / 1lt 0.9% NaCl	Cannula / giving set / 250 ml 0.9% NaCl
Length of Treatment	7 hours	7 hours	15 mins
Test dose required	No	Yes – 1 hour	No
Risk to patients	ABO mismatch Viral infection Bacterial infection	Anaphylaxis (< 1 per million)	Anaphylaxis (< 1 per million)
Nursing Time	8 hours	9 hours	1 hour

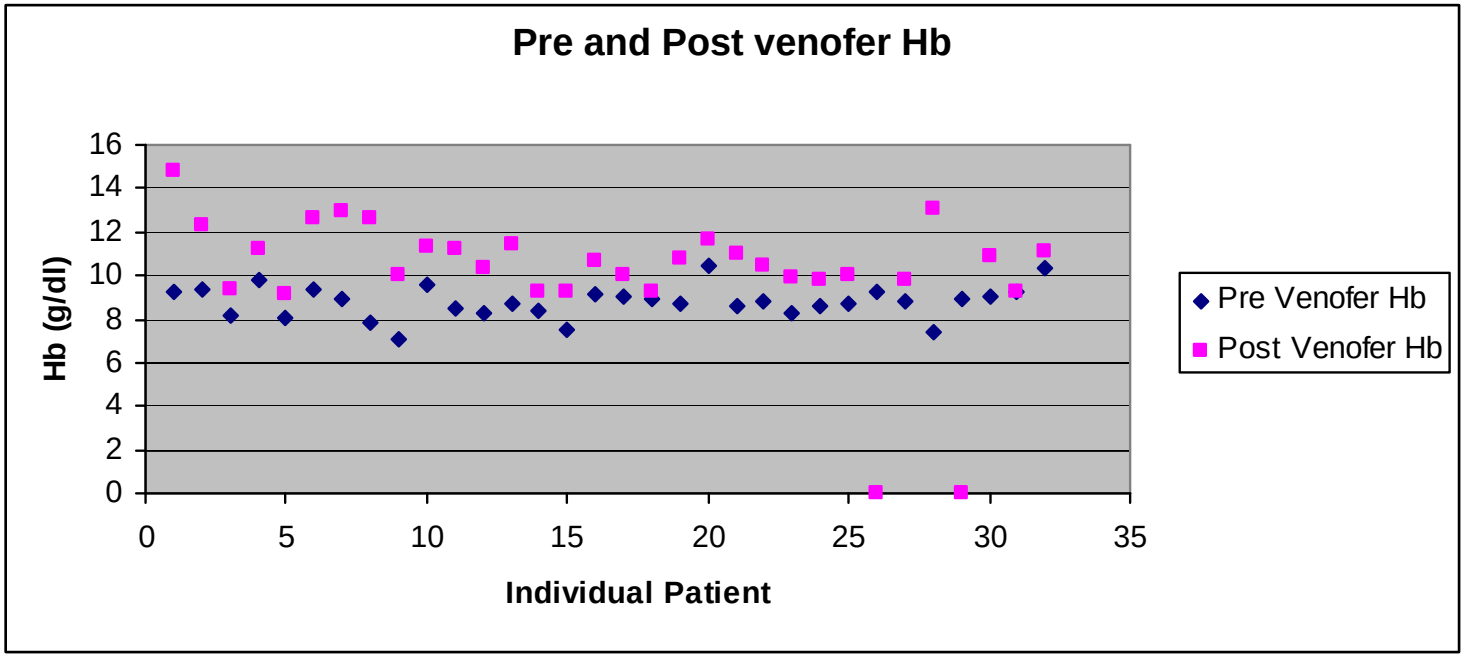
Actual Costs

Required Treatment	**Transfusion**	**Ferinject®**
Amount	2 unit	1g
Cost of Drug per unit/g	£246	£191
Crossmatch Cost (£)	25	0
Time in required hours	7	0.5
Band 5 nurse (cost per Hr)	18.24	18.24
Cost of nurse per infusion	£127.68	£9.12
Giving set Cost	same	same
Cost of Treatment (Drug Cost + Nurse Cost)	**£398.68**	**£200.12**
Day case Payment via HRG SA04 with MFF (IDA no CC)	£344	£344
Income per patient	£-54.68	£143.88
Income per Hour	£-7.81	£287.76

Use of iv iron RBH 2004-2010



Antenatal Venofer Audit 2006



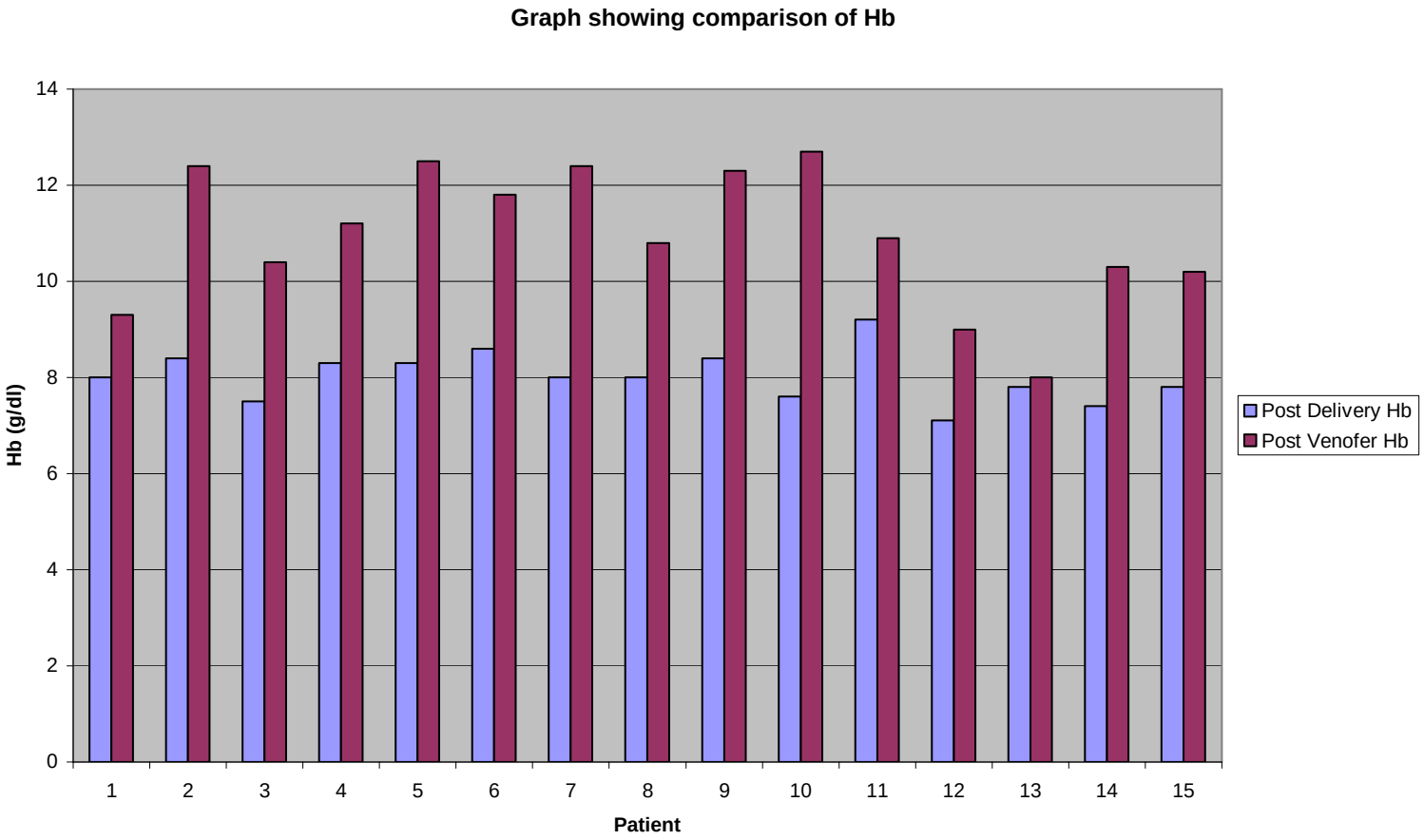
Antenatal Venofer audit

- 32 antenatal patients, 82 episodes of Venofer infusions
- Pre Venofer average Hb = 8.8 g/dl
- Post Venofer average Hb = 10.84 g/dl
- Average increased of Hb post Venofer

  = **2.05g/dl**

Only 9/32 had Hb < 10 at delivery and 2 required transfusion post natally

Post natal Venofer 2007



Post Natal Results

- Post Delivery average Hb: 8.02 g/ dl
- Post Venofer average Hb: 10.9 g/ dl
- Average increase of Hb post Venofer:

  2.88 g/ dl

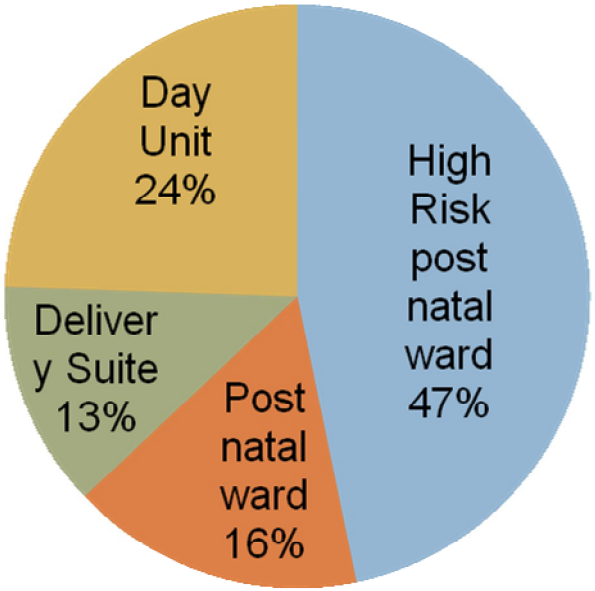
Excluded previous antenatal use of Venofer, 2 blood transfusions

Problems with checking Hb in commmunity

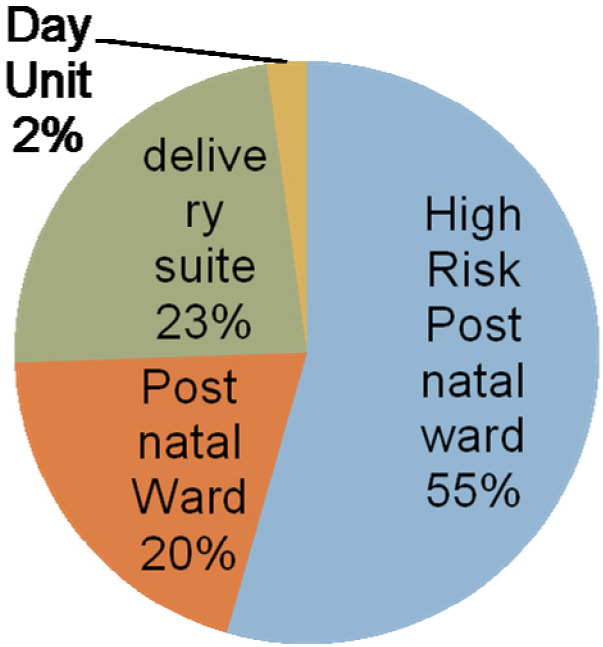
Distribution of Venofer Use

(number of 100mg ampoules used)

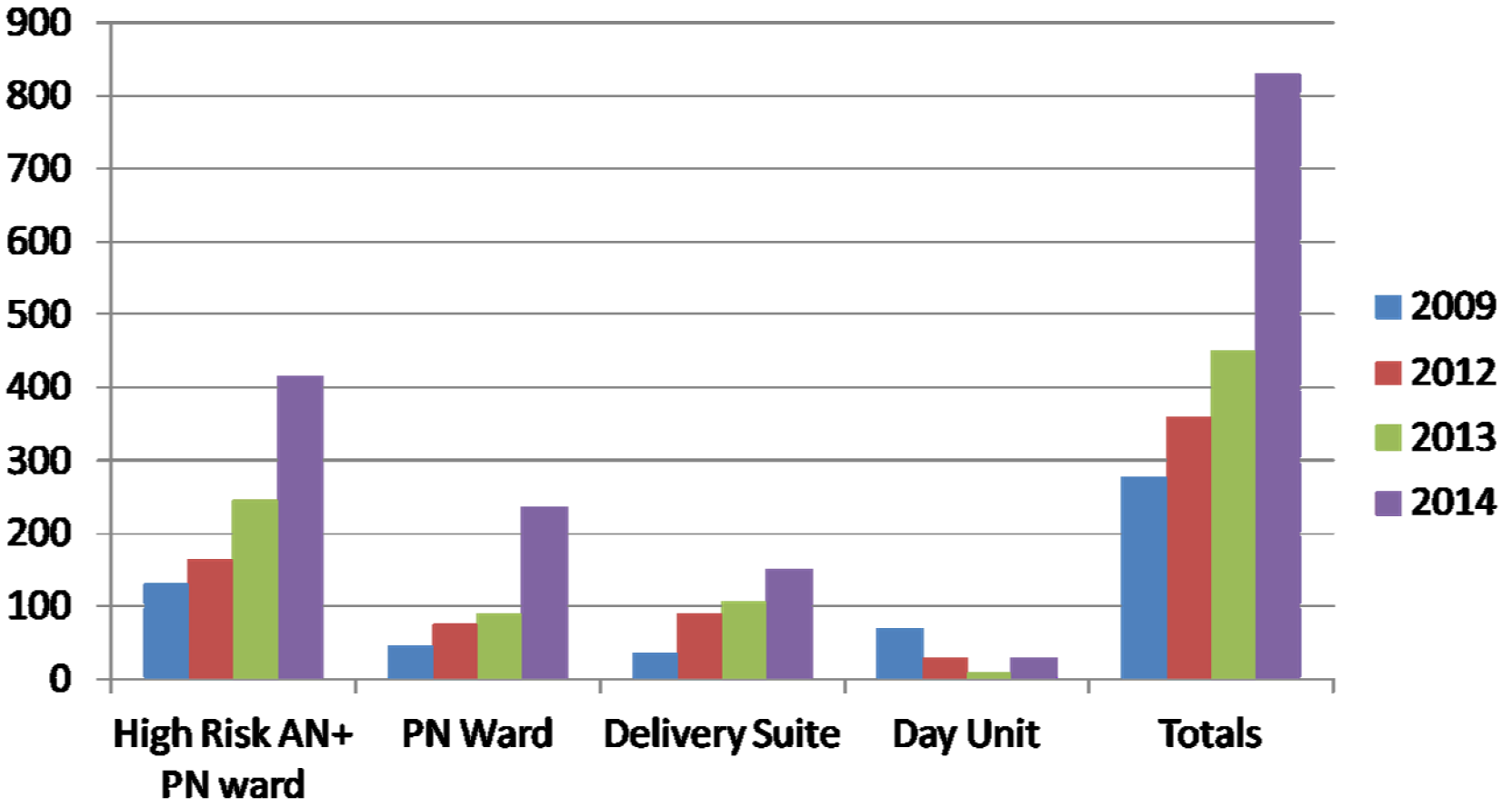
2009 (n=278)



2013 (n=450)

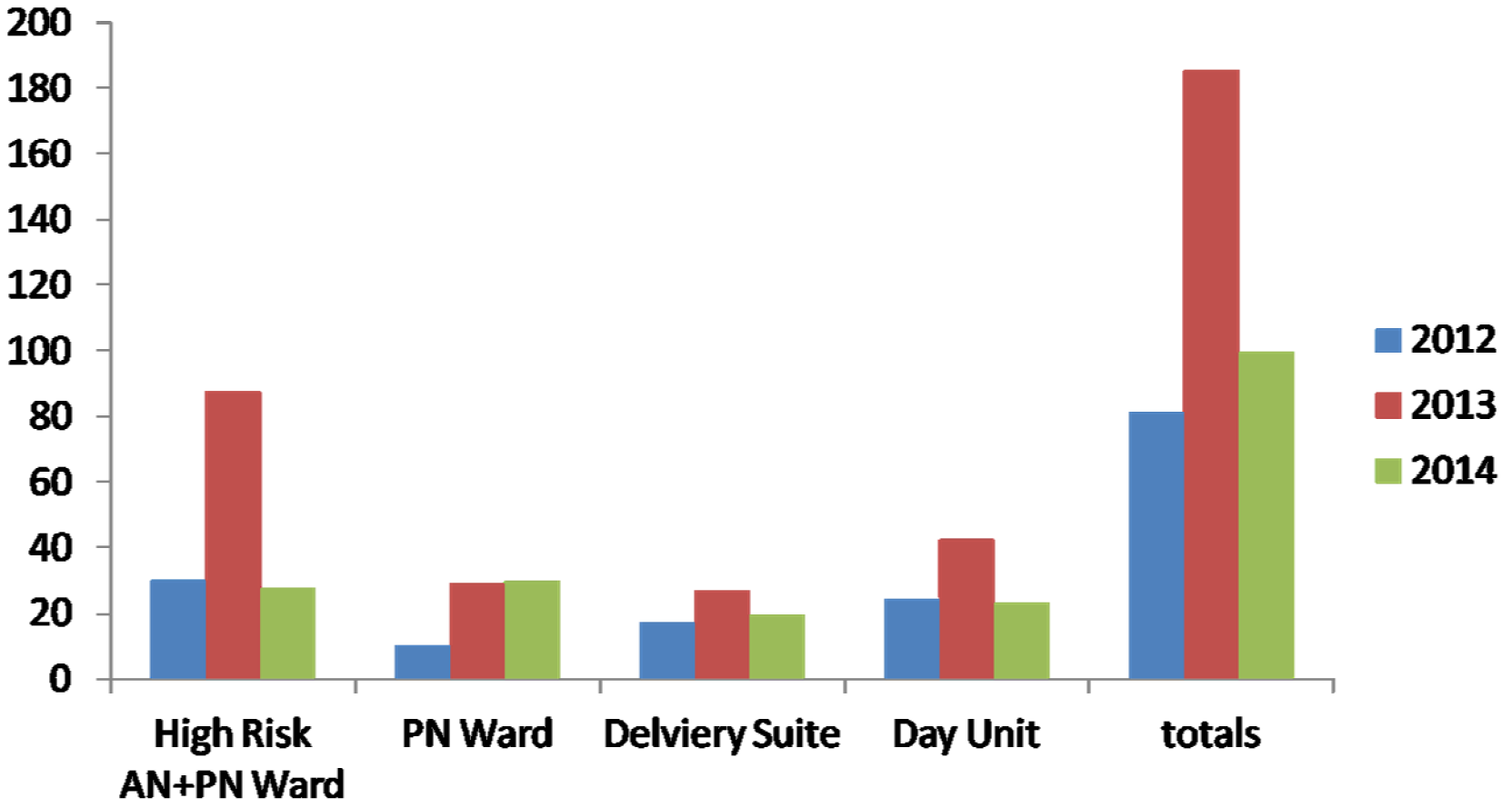


Distribution of Venofer Usage at RBH (number of 100mg ampoules used)



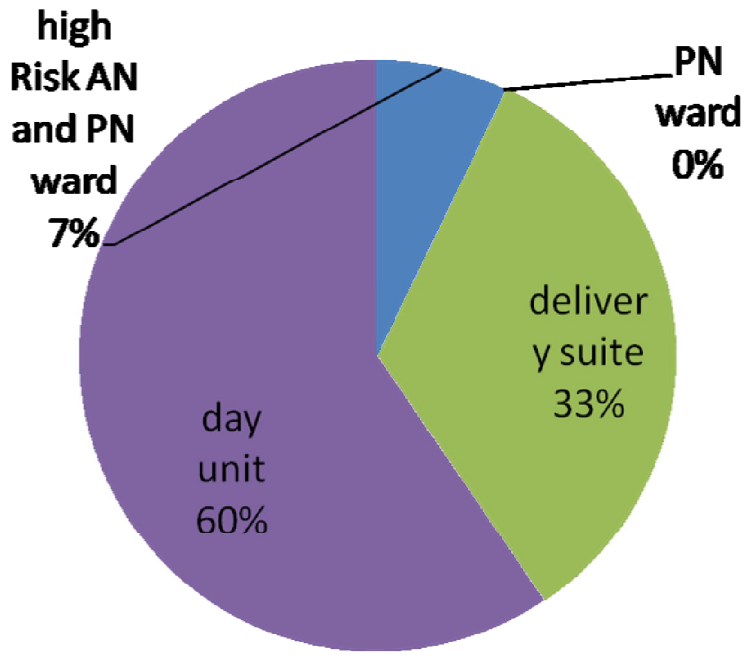
Distribution of Ferinject use at RBH

(numbers of 1000mg doses used)

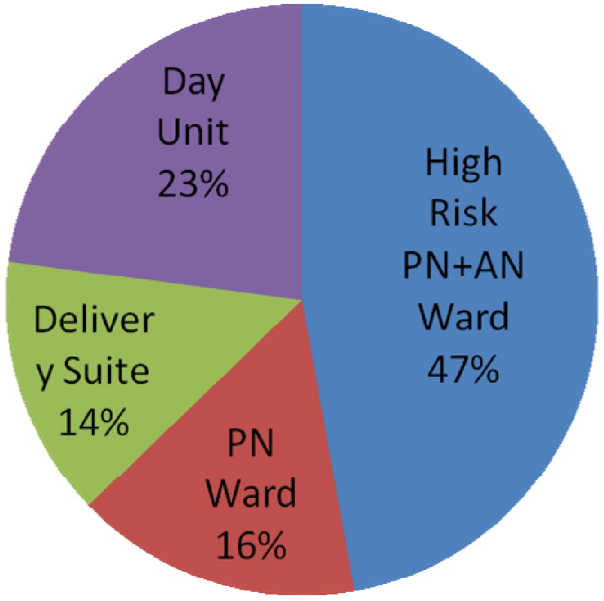


Change in Usage

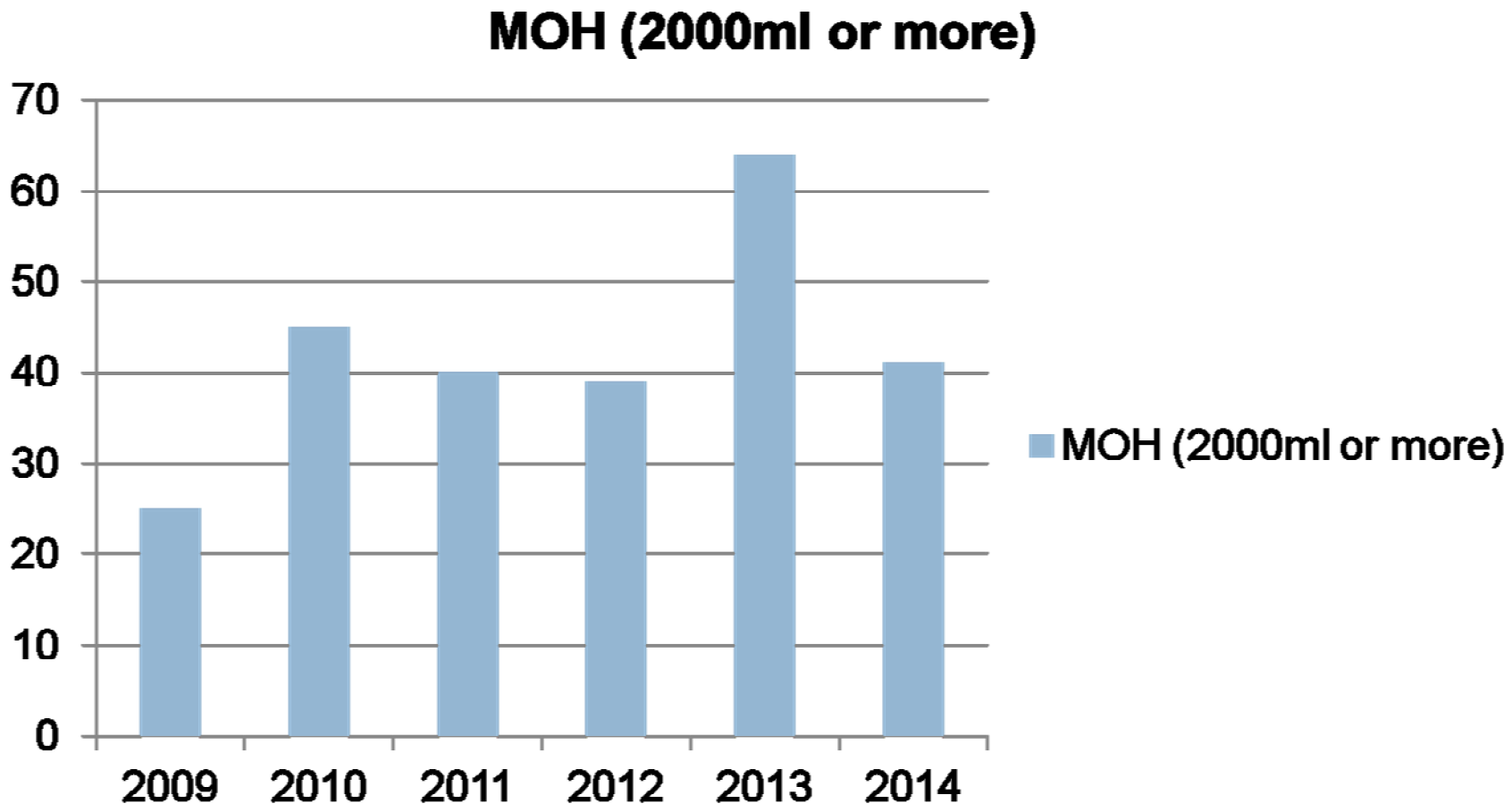
Ferinject 2009 (n=21x1000mg)



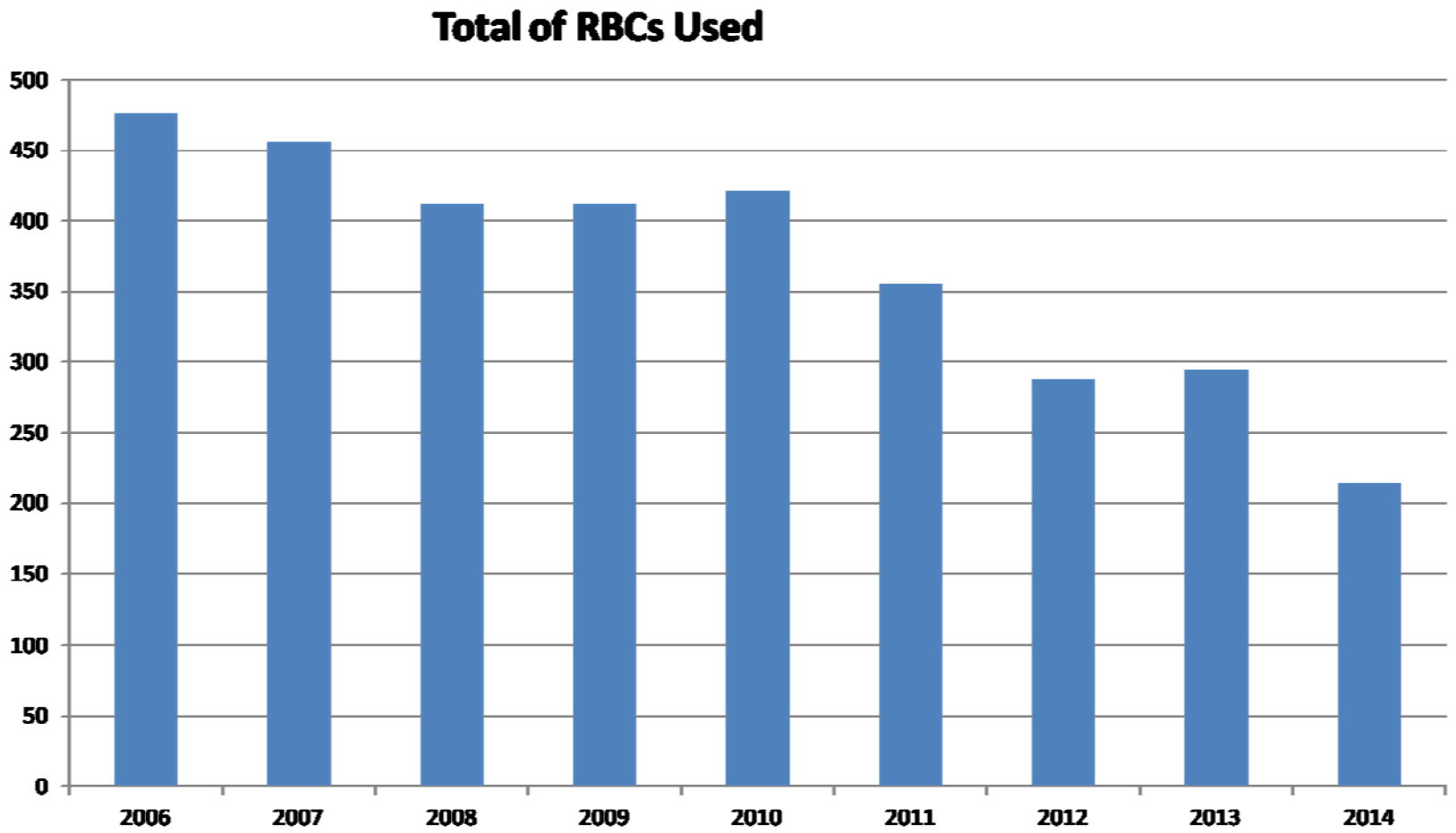
Ferinject 2013 (n=185x1000mg)



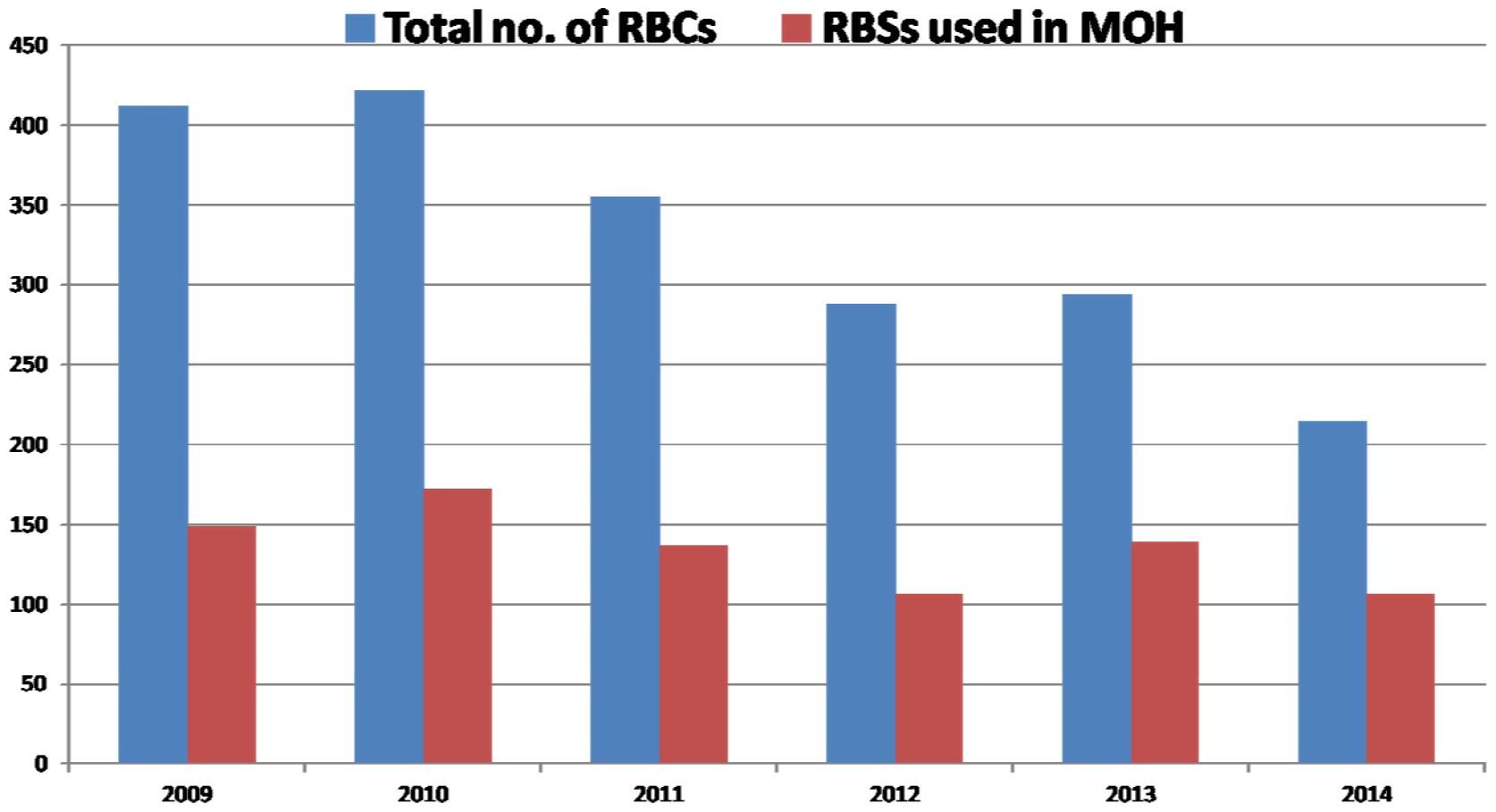
Numbers of deliveries rose 5278-5968 between 2002 -2009 and then stabilised



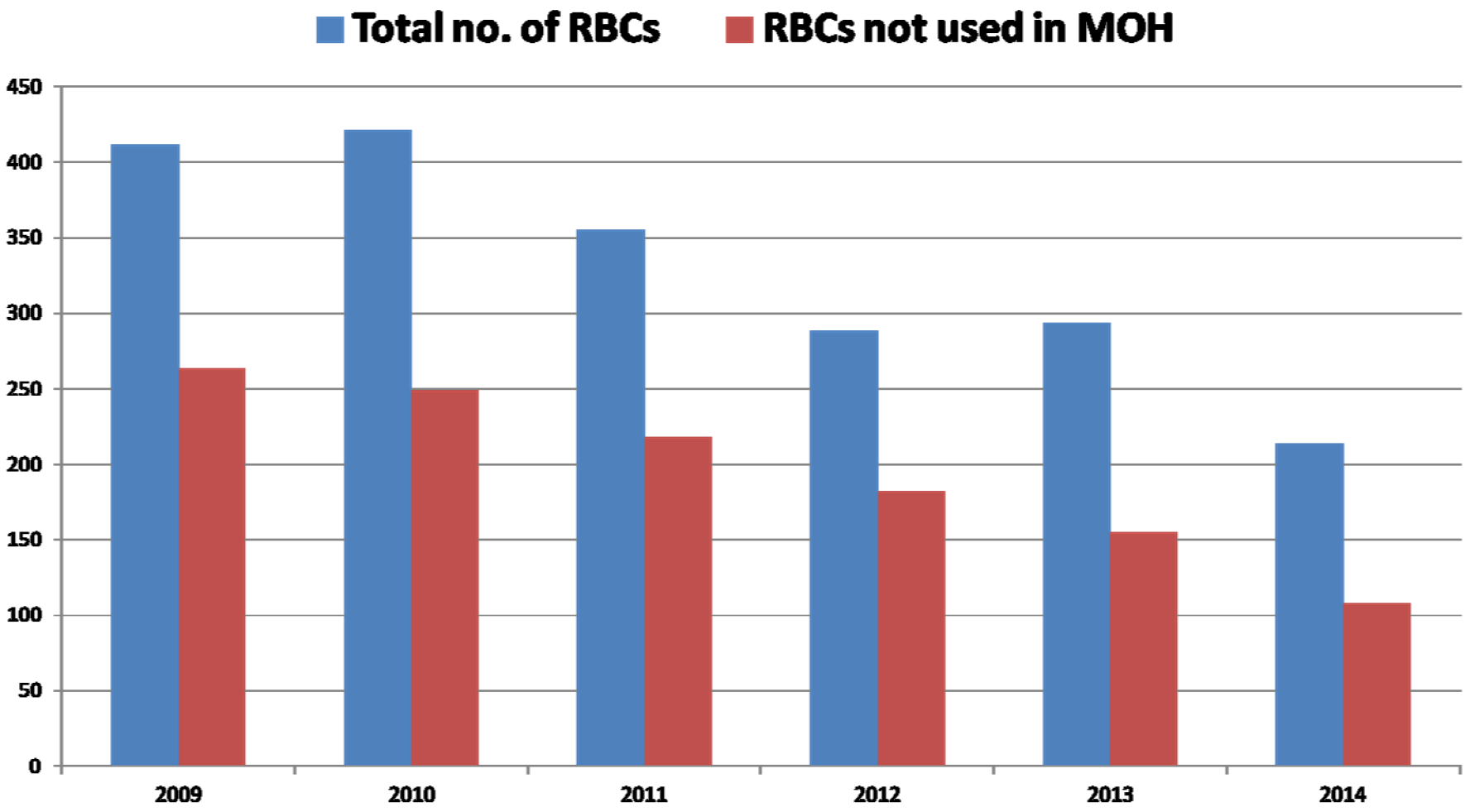
Reduction in Blood Usage



Blood used in MOH



Blood Not used in MOH



What next?

- Guidelines for transfusion/ iv iron
- Education and training of all staff
- Feedback for all cases of overtransfusion

Blood Wastage

- ***80% blood cross matched is not being used in maternity***
- Women admitted with placenta praevia no longer are cross matched on ward twice weekly
- LSCS for placenta praevia do not need routine cross match unless low Hb, anterior placenta, suspected accreta, multiple fibroids or at surgeons discretion

Electronic cross match

- Women out of area need to have bloods taken at RBH so suitable for electronic cross match
- Rhesus negative women?
- If suitable for electronic cross match blood arrives in 18 minutes after MOH call

Next Steps

- Can we safely reduce blood cross matched for MOH from 4 units to 2?
- Can we reduce transfusion threshold from 8g/ dl without compromising patient safety?