Hot topics in Paediatric Transfusion and the Emergency Provision from the Blood Transfusion Laboratory

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Inspired by Children



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# What is the difference between Transfusion Practice in Paediatrics and Adults?

Age dependent requirements

44 week gestational age require products suitable for neonatal use
4 months grouping technique changes

Product range

Neonatal products
 Large volume red cells
 Methylene Blue Treated Frozen Products
 Aphersis Platelets



### Children don't ≻Drive ≻Drink ≻Take Drugs (usually)

therefore are less likely to be involved in accidents or trauma situations

Children are immunocompromised for the 1<sup>st</sup> 4-6 months of life and are less likely to develop antibodies





Major haemorrhage protocols

**Blood grouping Neonates** 

Use of O Negative Blood

2 sample rule

**Apheresis Platelets** 



# Major Haemorrhage Policy



### Major Haemorrhage pack 1 (MHP 1)



Red cells	FFP
1 adult unit	2 'neonatal' units FFP
LVT or Standard	(100ml)
(250 ml)	
1 adult unit	1 unit FFP
(500 ml)	(225ml)
2 adult units	2 units FFP
(500 ml)	(450ml)
4 adult units	4 units FFP
(1000 ml)	(900ml)
	Red cells 1 adult unit LVT or Standard (250 ml) 1 adult unit (500 ml) 2 adult units (500 ml) 4 adult units (1000 ml)

### Major Haemorrhage pack 2 (MHP 2)

Similar to above BUT with the added complication of the provision of cryoprecipitate and platelets in both neonatal and adult pack sizes



Table 1 – Major Haemorrhage pack 1 (MHP 1)

Alder Hey Children's NHS

NHS Foundation Trust

### Red cells 4 adult units(1000ml)

**OCT** 4 units(800ml)

### Major Haemorrhage pack 2 (MHP 2)

Red cells	OCTAPLAS	Cryoprecipitate	Platelets
4 adult units	4 units	10 units	1 adult pack
(1000 ml)	(800 ml)	(400 ml)	(200 ml)



# Problems encountered when blood grouping Neonates





# Group and DAT testing cord samples



# Paediatrician to decide if further testing is required



### **NHS** Blood and Transplant

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# **Sp-ICE Screen**

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ABO/RhD group	22 Aug 2012 11:21	APLI0001	Heather Aplin	Report viewed		
Antibody Information	22 Aug 2012 11:21	APLI0001	Heather Aplin	Report viewed		
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Technique	22 Aug 2012 10:26	mellor0009	NHSBT Gordon Mellor	Report viewed		
Sample Type	22 Aug 2012 09:29	APL10001	Heather Aplin	Report viewed		
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Use of O Negative red cells

Alder Hey Children's Hospital

3 units of O Negative emergency blood was used in the last 6 months.

Liverpool Women's Hospital

30 Paediatric units of O Negative blood was used in the same period

2.2.2.A.



### EMERGENCY O NEGATIVE BLOODTRANSFUSION DEPARTMENT ALDER HEY CHILDREN'S HOSPITAL

IF EMERGENCY O NEGATIVE BLOOD IS USED ALL INFORMATION MUST BE RECORDED BELOW AND THE TRANSFUSION DEPARTMENT INFORMED ASAP ON EXT 2491 or 2492

DATE	NAME	HOSPITAL		BAG NUMBER	
CLINICAL INDICATION FOR USE	in the second seco	NUMBER	- The second sec		

**RETURN THIS FORM TO THE TRANSFUSION DEPARTMENT AS SOON AS POSSIBLE.** 

CLINICAL INDICATION FOR USE





Msoft tracking system

There should be a picture of our alarm system here – one of the disadvantages of agreeing to speak after retirement is a lack of access to all those tools you are used to- sorry





### O Neg RBC Monthly Net Issues





#### Stock holding at Alder Hey Children's Hospital

- 4 A Positive red cells
- 4 A Negative red cells
- 2 A Negative large volume red cells
- 2 A Negative irradiated red cells
- 2 B Positive red cells

- 4 O Positive red cells
- 4 O Negative red cells
- 2 O Negative large volume red cells
- 2 O Negative irradiated red cells





# 2 samples in paediatric transfusion

What can we do to move towards compliance?

- We have completed a Gap analysis using the BCSH Taskforce documents
- We have contacted our users to ask for assistance in making this happen
- We have reviewed our WBIT figures for both Blood Science and specifically Blood Transfusion



During April 2013 we crossmatched 189 patients, 48 of whom were crossmatched on the 1<sup>st</sup> sample received = 25%

12 of these patients were for Cardiac surgery

18 were neurosurgical patients who came from anywhere from Aberdeen to West Sussex

7 were NICU patients. 2 patients had 2 transfusions before a second sample was received

9 were emergency admissions to PICU



Paediatrics is different to adult medicine in so many ways. Samples are a very precious resource.

Our WIBT rate is very low



Apheresis platelets

### Apheresis platelets should be used for all children <16 years old (born on or after 01.01.96)

➢ Reduce HLA immunisation

Reduce exposure to potentially infectious donors

Reduce number of febrile non haemolytic reactions

Give a better response in refractory patients



SaBTO have removed the requirement for 80% of platelets to be produced by apheresis . This percentage will drop to 60% by 2016 according to NHSBT

The NHSBT will continue to provide apheresis platelets where they are readily available, with the option of providing a pool where this is not possible





NHSBT are confident that we can continue to meet the clinical need of patients including those who may need platelets donated by apheresis for the following indications:

- Intrauterine and neonatal transfusion (by pack specification)
- Children and young adults born after 01.01.96





Thank you for you time .

**Contact details** 

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