

The Trouble with Trauma

Paul Grist - Chief BMS
Blood Transfusion
Royal London

26th September 2014
BBTS Harrogate



Overview

The Royal London Hospital
Barts Health NHS Trust
Remote Issue Fridges



Remote Issue Fridges – Why?

675 beds

110 Wards / Departments

26 Operating Theatres

Purpose Built Laboratory

4th floor in a Building Behind Hospital.



Remote Issue Fridges – Why?



Remote Issue Fridges – Why?

675 beds

110 wards / Departments

26 Operating Theatres

Purpose Built Laboratory

4th floor in a Building Behind Hospital.

Eight Remote Issue Fridges



Remote Issue Fridges - What?



- Vending Machines.
- HemoSafe
contain <150 units.
- HemoNine
<120 units (9 drawers)
- Can dispense either;
ABO compatible units,
Crossmatched units or 'Emergency
blood'
- Emergency blood.
O Neg for Women
O Pos for Men



Trouble with Trauma Vs Routine

Routine Patients

- Full Patient Demographics
- Detailed transfusion history on all patients
- Clinical Details
- Special Requirement Rules
- Patient Flags

Trauma Patients

- Unique Naming System – Alpha ABC, Unknown
- Standard DoB 01.01.1900 / 01.01.2000
- No Transfusion History (May have received 'BoB' or elsewhere.
- No Clinical History (other than the presenting trauma)
- No Special Requirements
- No Patient Flags.



Question 1.

Currently >50 Units of O RhD Negative available across the trust.
What Emergency O RhD Neg blood would you stock in your fridges?

23% 1. O RhD Neg CMV- HbS- C- E- K-

7% 2. O RhD Neg HbS- C- E- K-

62% 3. O RhD Neg C- E- K-

8% 4. O RhD Neg



Trauma Case 1 – Pedestrian Vs. Car

Name: **DELTA AOB, UNKNOWN**

DOB: **01/01/1900**

Sex: **Male**

Hospital No: **768412**

Clinical Details: **Pedestrian vs. Car**

Historical Group: **Not Available**

Transfusion History: **None Provided**



Question 2.

What Emergency blood would you take from the remote issue fridge?

92% 1. O RhD Positive

8% 2. O RhD Negative



Case 1 – Trauma Patient is JS

Name: **JS**

DOB: **13/07/1945**

Sex: **Male**

Hospital No: **QE724233**

Clinical Details: **Hodgkin's Lymphoma**

Historical Group: A RhD Positive

Transfusion History: Multiple transfusions, no clinically significant antibodies.



Question 3.

What routine blood would you give in the laboratory?

- 6% 1. O RhD Positive
- 3% 2. O RhD Negative
- 71% 3. A RhD Positive, Irradiated
- 19% 4. A RhD Positive, CMV-, Irradiated



Implications?

Special Requirements are NOT MET.

Non Irradiated blood given.

Potential Risk of GvHD

Vs.

‘Life Saving’ Transfusion



Case Study 2. Pedestrian Vs Bike

Name: FOXTROT ACR, UNKNOWN

DOB: 01/01/1900

Sex: Female

Hospital No: 768884

Clinical Details: Trauma – Pedestrian Vs Bike,
Distended tender abdomen

Historical Group: **Not Available**

Transfusion History: **None**



Question 4.

What 'Emergency Blood' would you take from the remote issue fridge?

0% 1. O RhD Positive

100% 2. O RhD Negative



Trauma Case 2 is RM

Name: **RM**

DOB: **11/08/1975**

Sex: **Female**

Hospital No: **354409**

Clinical Details: **35/40**

Historical Group: O RhD Positive

Transfusion History: No transfusions (three previous pregnancies), Anti-c quantitation at 34/40 14.5 IU/ml. Rh Phenotype R1R1



Question 5.

What blood would you crossmatch in the laboratory?

- 1% 1. O RhD Positive
- 3% 2. O RhD Negative
- 6% 3. O RhD Positive Irradiated
- 90% 4. O RhD Positive, R1R1, CMV-, K-



Implications?

Special Requirements are NOT MET.

Antigen positive blood given (All RhD Neg units are C- E- K-)

CMV- blood not given (Not an issue if patient delivers)

Risk of Complications to Current/Future Pregnancies
Vs.
Life Saving Transfusion



Case Study 3. Pedestrian Vs. Car

Name: UNIFORM AWA, UNKNOWN

DOB: 01/01/1900

Sex: Male

Hospital No: 982411

Clinical Details: Trauma – Pedestrian vs. Car

Transfusion History: None



Question 6.

What 'Emergency Blood' would you take from the remote issue fridge?

96% 1. O RhD Positive

4% 2. O RhD Negative



Trauma Case 3 is LP

Name: LP

DOB: 01/12/1984

Sex: Male

Hospital No: 411123

Clinical Details: Sickle Cell Disease

Historical Group: O Positive

Transfusion History: On regular transfusion,
Phenotype Ro K-, Anti-Jka. (Extended phenotype
available)



Question 7.

What blood would you crossmatch in the laboratory?

- 0% 1. O RhD Positive
- 1% 2. O RhD Negative
- 9% 3. O Ro/rr, Jka-
- 90% 4. O Ro/rr, Jka- K- HbS- <10 days old



Implications?

Special Requirements are NOT MET.

Antigen Negative Blood Not Crossmatched

HbS- Blood not given

Freshest Blood Not Given

Risk of Complications due to Incompatible Transfusion / HbS Blood
Vs.

‘Life Saving’ Transfusion



Summary

Trauma patients often require blood and blood products urgently.

The laboratory can only provide safe blood when all clinical information and transfusion history is provided.

In the event of trauma, life saving transfusion requirements often outweigh the clinically imposed special requirements.

