Managing Acute Transfusion Reactions

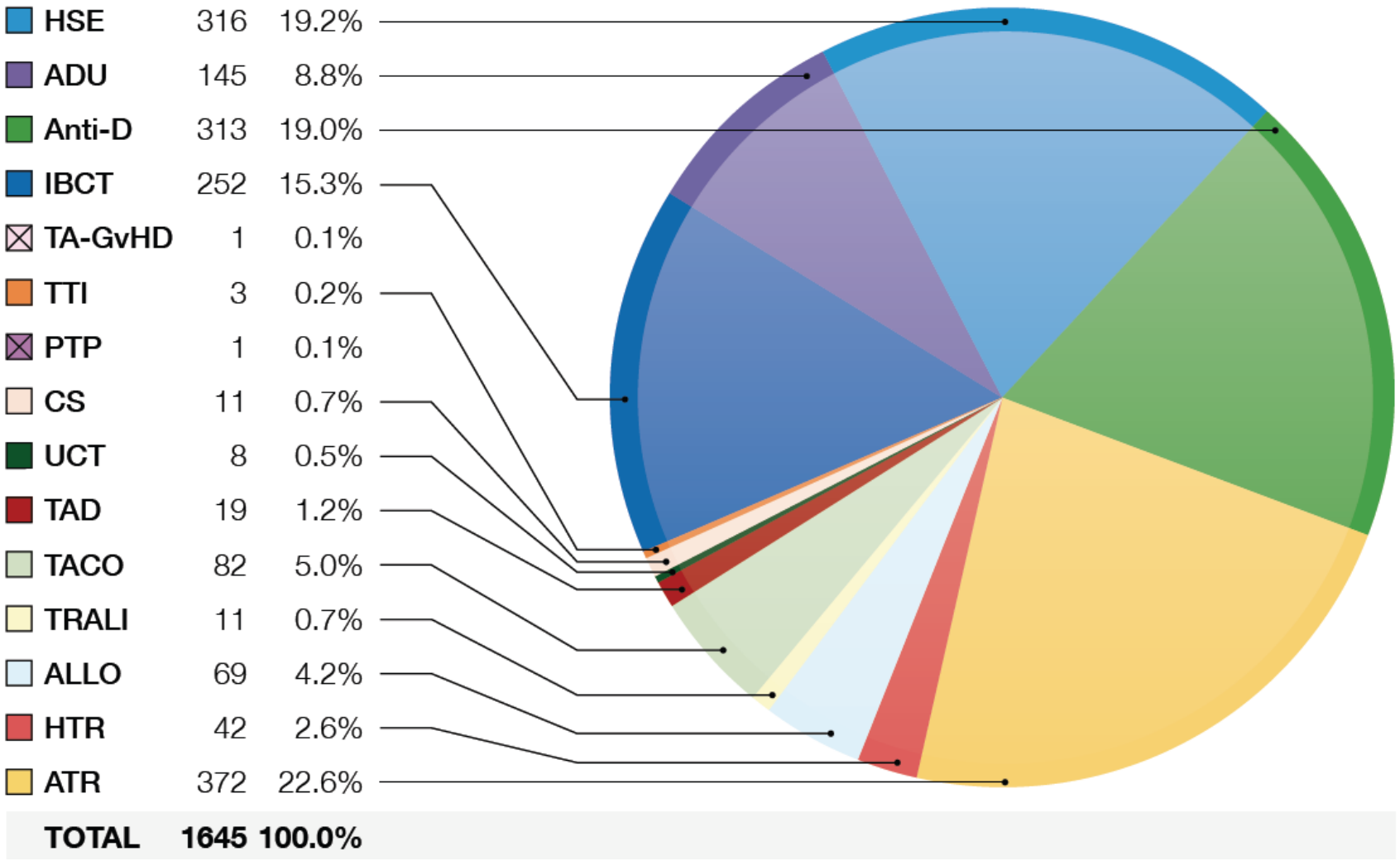
A team effort

Downton Abbey new series

1. Never watched it
2. As good as ever
3. Getting boring
4. Just like home!

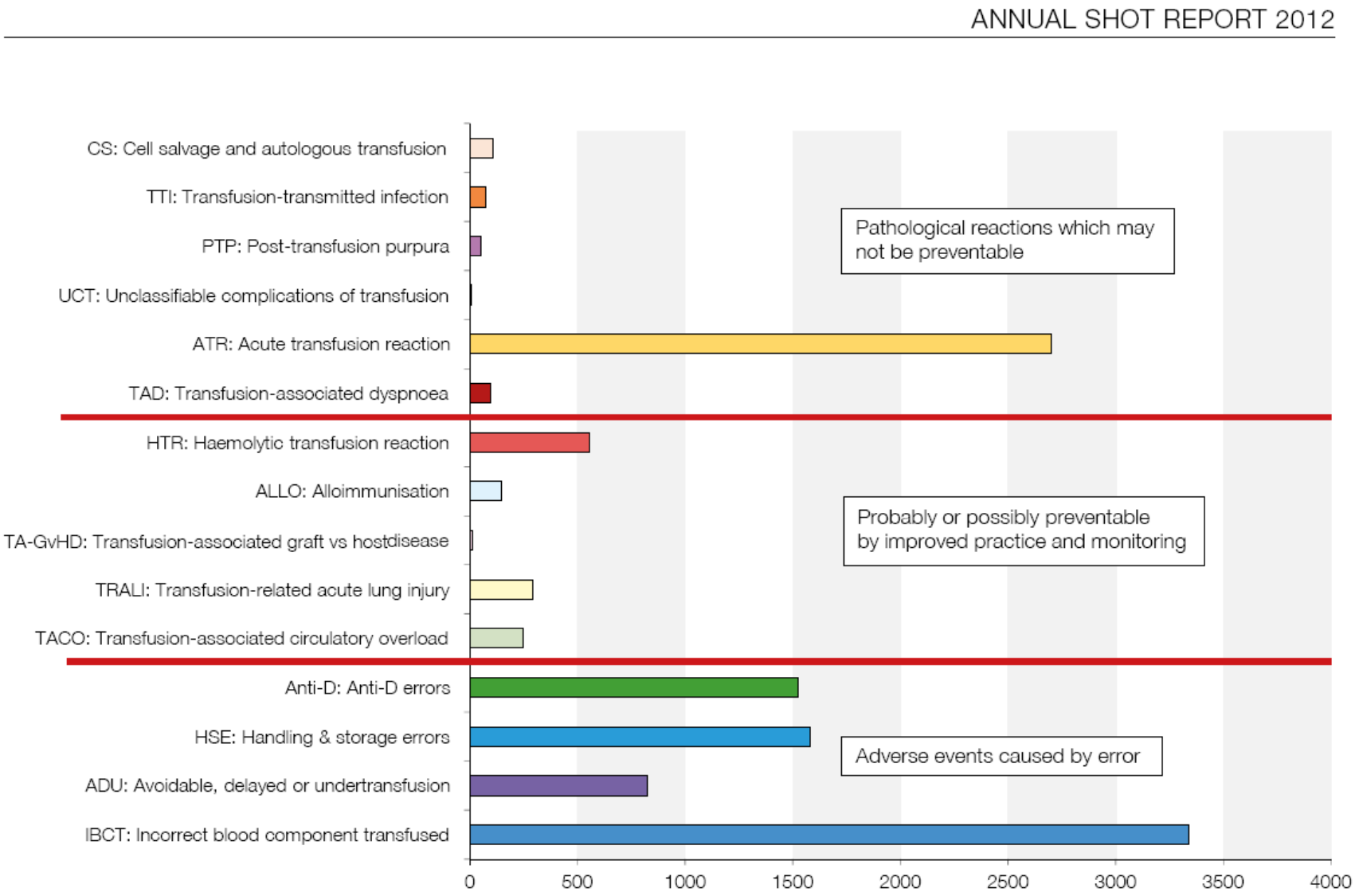
Introduction

- Acute transfusion reactions are relatively common
  - Rates of 0.5-3% often quoted
- Rarely cause death or long-lasting morbidity but can be alarming for the patient
- May leave the transfusion team unclear how to manage transfusions in the future

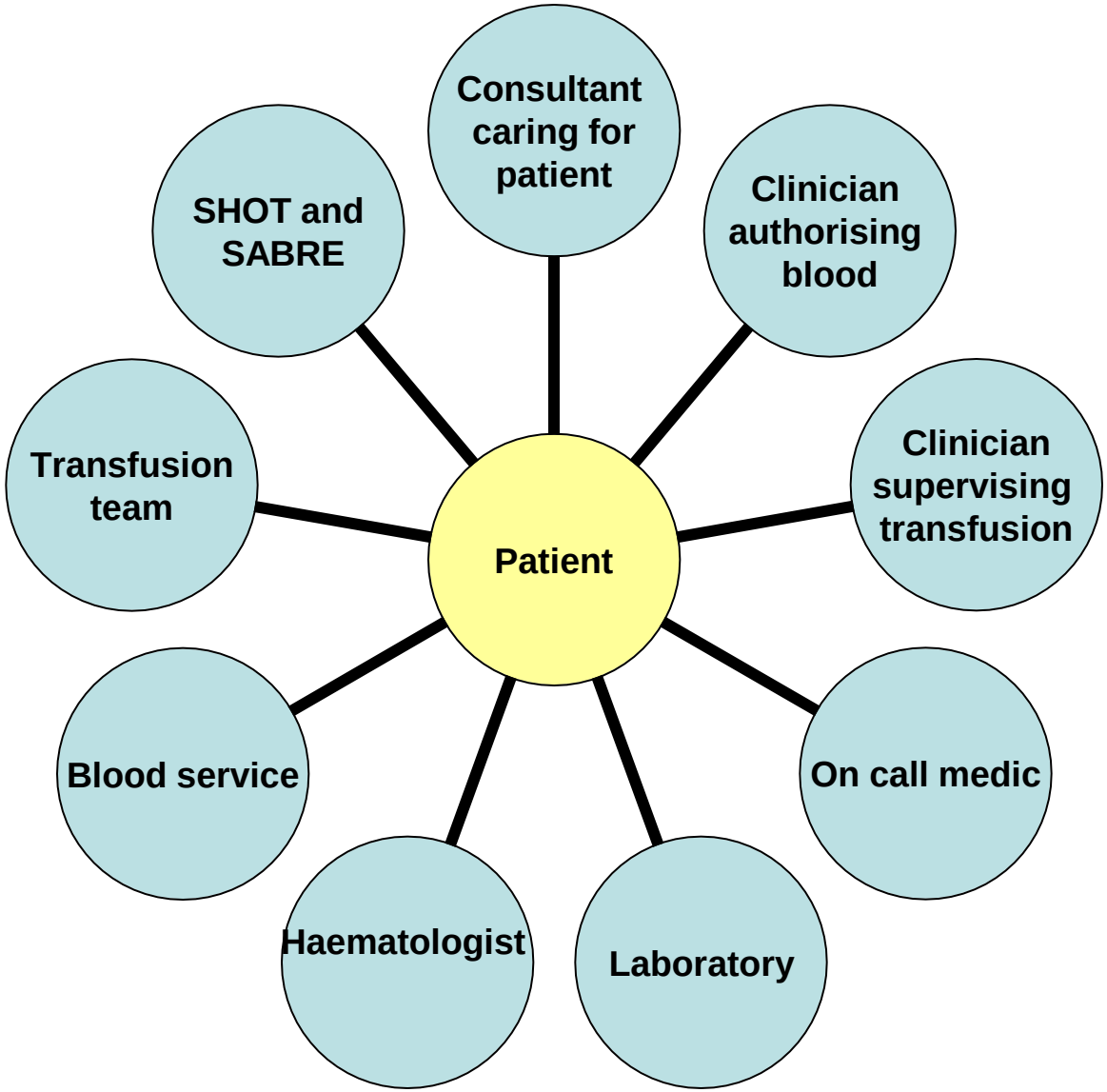


HSE	316	19.2%
ADU	145	8.8%
Anti-D	313	19.0%
IBCT	252	15.3%
TA-GvHD	1	0.1%
TTI	3	0.2%
PTP	1	0.1%
CS	11	0.7%
UCT	8	0.5%
TAD	19	1.2%
TACO	82	5.0%
TRALI	11	0.7%
ALLO	69	4.2%
HTR	42	2.6%
ATR	372	22.6%
TOTAL	**1645**	**100.0%**

Cumulative data from SHOT



ATRs: Who is in the team?



Case from SHOT

- 82 year old with chronic iron deficiency and Hb 45 g/L
- Decision to transfuse
- 4 units given, 2.5 hours each
- Developed TACO

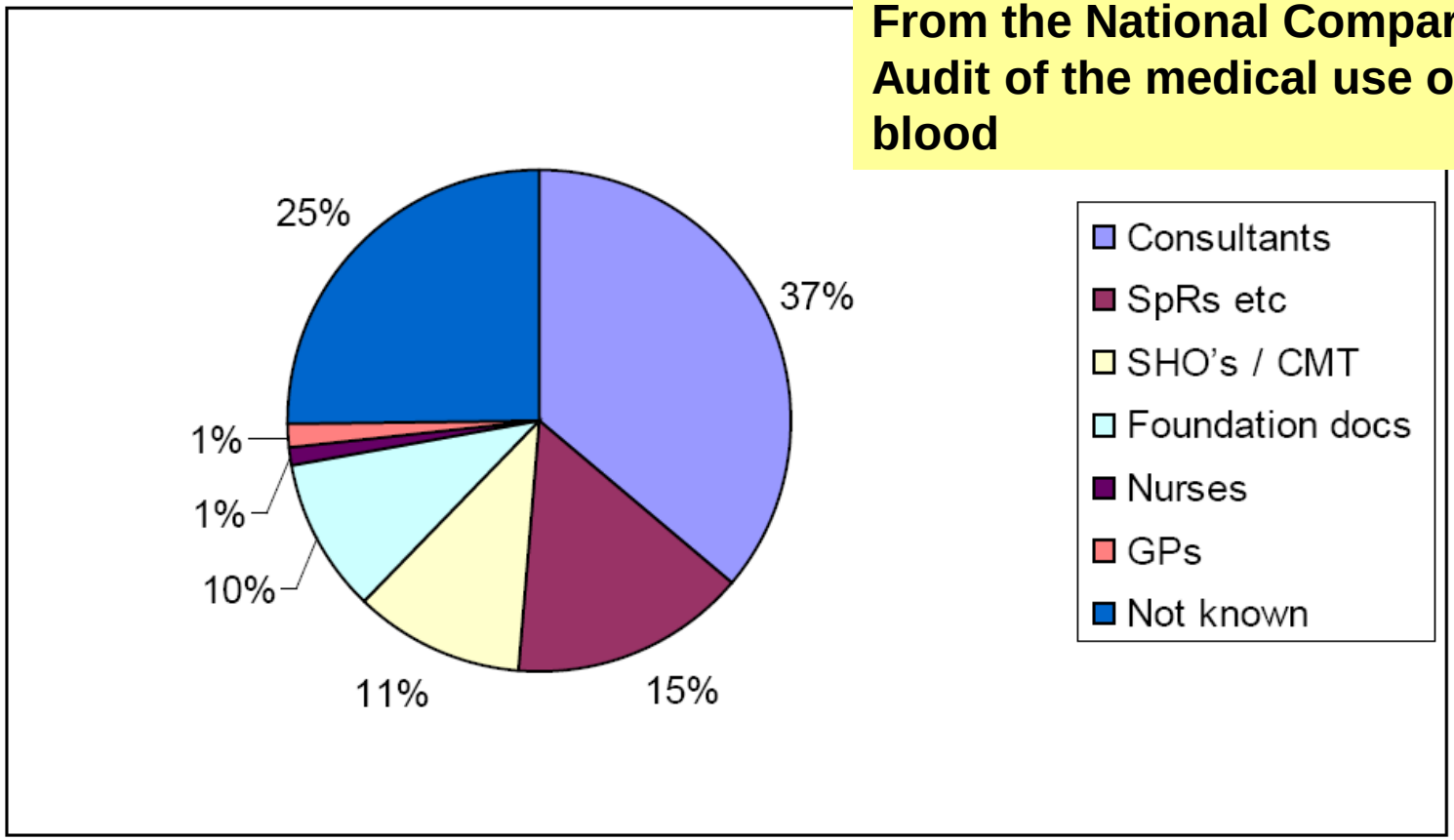
Which staff group is most likely to make the decision to transfuse a medical patient?

1. Nurse
2. Foundation doctor
3. Specialist registrar
4. Consultant
5. Other doctor

Who made the decision to transfuse?

NHS Blood and Transplant

From the National Comparative Audit of the medical use of blood



Clinician authorising blood: what is their most important role?

1. Ensure transfusion is appropriate
2. Check transfusion history: any special requirements
3. Ensure transfusion happens when and where the patient can be observed
4. Authorise an appropriate number of units at an appropriate rate
5. Ensure appropriate follow up

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5. Ensure appropriate follow up probably consultant

Which complications of transfusion are *likely* to present in the first 15 minutes?

1. Anaphylaxis
2. Symptoms and signs of acute haemolysis
3. Bacterial contamination
4. Febrile non-haemolytic transfusion reaction
5. TACO
6. Transfusion-associated graft versus host disease

Which complications of transfusion are *likely* to present in the first 15 minutes?

- Anaphylaxis
- Symptoms and signs of acute haemolysis
- Bacterial contamination
- Febrile non-haemolytic transfusion reaction usually 40 mins plus
- TACO unlikely to present early
- Transfusion-associated graft versus host disease presents within 30 days

Severe reaction

- Female patient was given platelets on the ward
- Experienced severe reaction with urticaria and hypotension
- Collapsed, unconscious
- Arrest team called but she “came to” quickly

MO called: what is their role? (obviously see the patient!)

1. Prescribe initial treatment
2. Arrange investigations
3. Decide whether to proceed with any further transfusions in the acute period
4. Document the likely cause of symptoms
5. Discuss likely cause with the patient

MO called: what is their role? (obviously see the patient!)

1. Prescribe initial treatment No, adrenaline should have been given already!
2. Arrange investigations Yes
3. Decide whether to proceed with any further transfusions in the acute period If necessary
4. Document the likely cause of symptoms Helpful
5. Discuss likely cause with the patient Yes

Red cell complication

- A patient with MDS had a 2 unit red cell transfusion, planned as a day case
- During the second unit of red cells transfused his temp rose 1.5 C
- Some Rigors
- BP rose from 128/82 to 135/90
- Given paracetamol, felt better after 2 hours but stayed in as lived alone

Regarding investigations, which do you most agree with?

1. The unit does not need to be cultured: this is likely to be a febrile ATR
2. The red cell unit must be referred to the blood service bacteriology lab for culture
3. The red cell unit can be cultured “ in house” if the hospital micro lab is suitably equipped
4. The blood service must be contacted to recall any other components from this donation
5. The most important investigation is immunoglobulin A level

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If the clinical picture is so severe that the unit is being cultured

- The blood service must be contacted so that a recall is performed
- The consultant haematologist on call should be contacted

When should the lab perform repeat group and antibody screen (+/- crossmatch?)

1. Any transfusion reaction
2. Any reaction that is not clearly allergic
3. Reactions with pain at venepuncture site, chest, back, loin
4. Hypotensive reactions (systolic or diastolic drop > 30 mm)
5. Febrile reactions temp rise > 1.5C, with or without rigors

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When to request/perform repeat serology

- Obviously if patient/unit details don’t match!
- Symptoms and signs suggestive of acute haemolysis
  - Chest, loin, back pain or pain at cannula site
  - Shock
  - Hypotension without skin changes
  - Dark urine

What is SHOT for?

1. Improve standards of hospital transfusion practice
2. Educate users on transfusion hazards and their prevention
3. Aid production of clinical guidelines
4. Inform policy within the UK Blood Services
5. Inform national policy on transfusion safety within the UK
6. Inform Europe about transfusion safety in the UK

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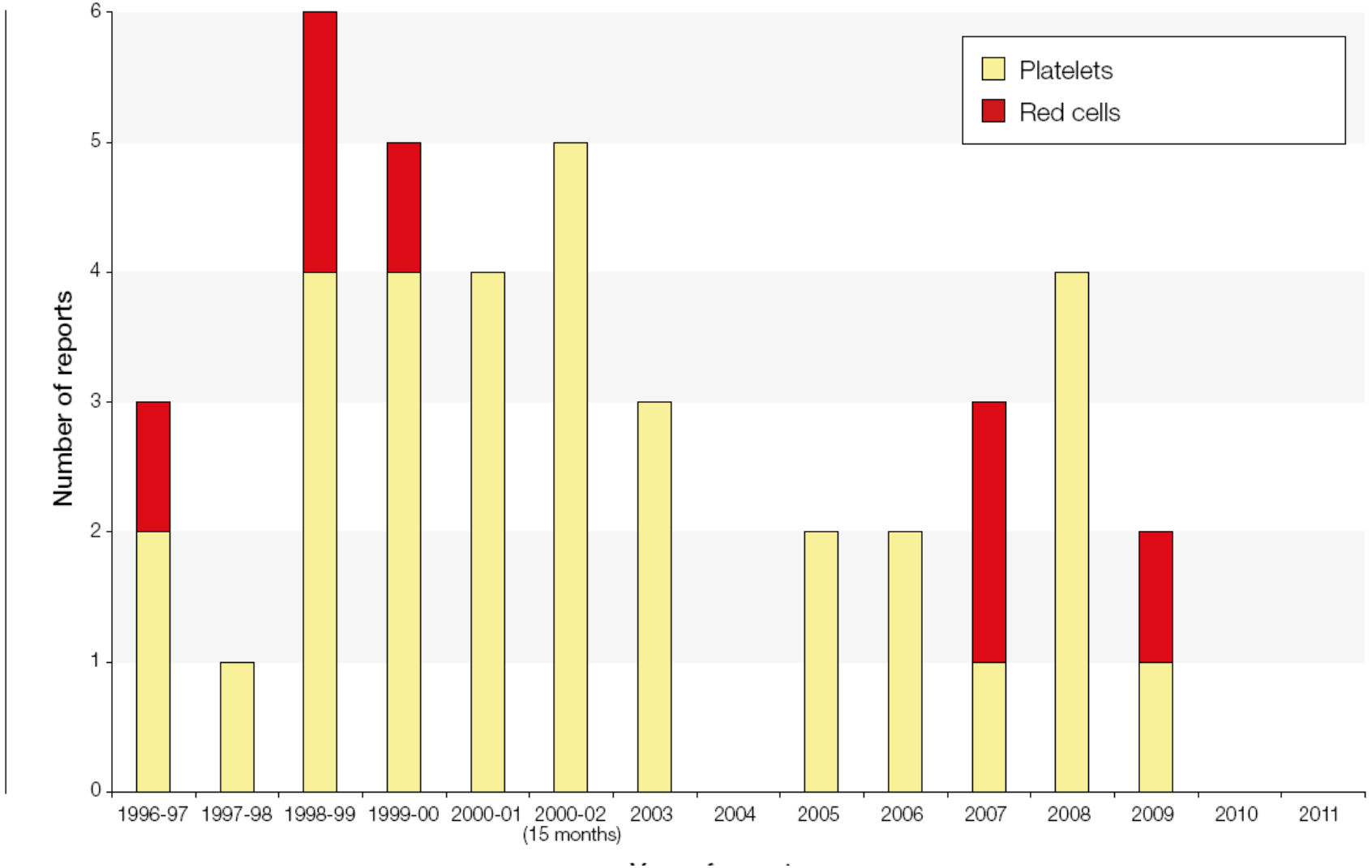
Platelets
Red cells
Number of reports
0
1
2
3
4
5
6
1996-97
1997-98
1998-99
1999-00
2000-01
2000-02
(15 months)
2003
2004
2005
2006
2007
2008
2009
2010
2011

Severe reaction

- Female patient was given platelets on the ward
- Experienced severe reaction with urticaria and hypotension
- Collapsed, unconscious
- Arrest team called but she “came to”
- Anaphylaxis

She is likely to need transfusion in the future. What steps are important?

1. She should have HLA matched platelets
2. She should see an allergist/immunologist for assessment of future risk of anaphylaxis
3. She should receive hydrocortisone and antihistamine premed prior to transfusion
4. She should receive antihistamine premed
5. She should have her immunoglobulin A level checked
6. Any transfusion should be given where she can be observed and where staff can recognise and treat anaphylaxis

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2. She should see an allergist/immunologist for assessment of future risk of anaphylaxis
3. She should receive hydrocortisone and antihistamine premed prior to transfusion
4. She should receive antihistamine premed No strong evidence for either choice 3 or 4
5. She should have her immunoglobulin A level checked
6. Any transfusion should be given where she can be observed and where staff can recognise and treat anaphylaxis But that applies to all patients and all transfusions

Thank you!

- To SHOT
- To all who report to SHOT
- To you for your enthusiastic participation!