

Annual SHOT Report 2015 – Supplementary information

Chapter 16: Paediatric Cases

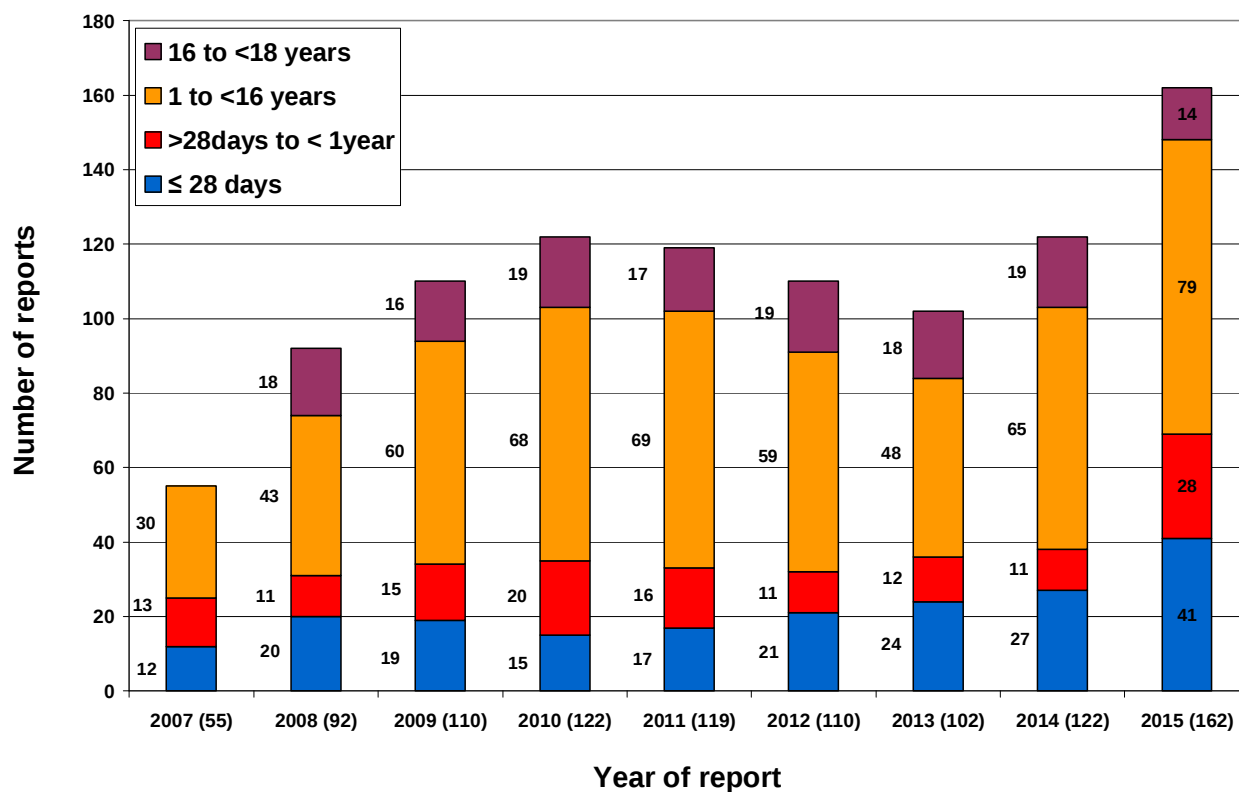
Additional table, figures and information not included in the main 2015 report

Table 16.1: Summary of paediatric cases 2015

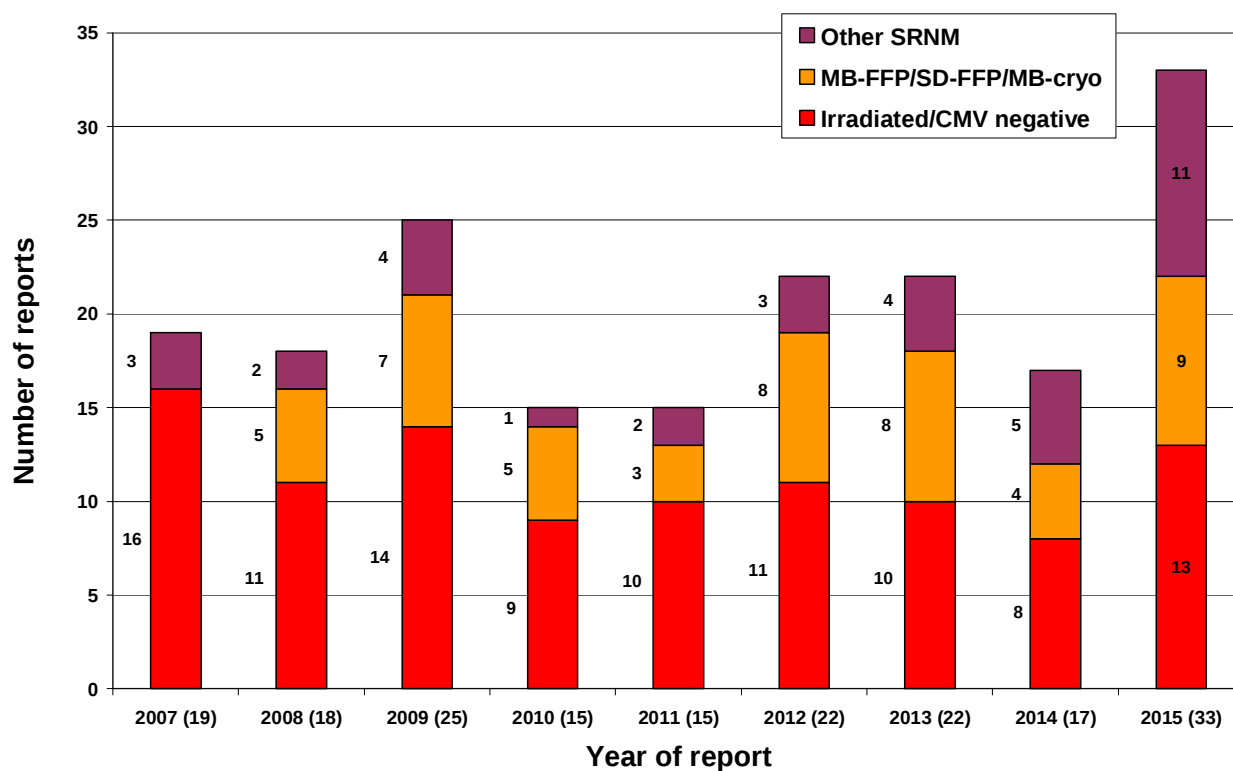
Category of case	≤28 days	>28 days to <1 year	1 to <16 years	16 to <18 years	Total paediatric cases
Incorrect blood component transfused (IBCT)	20	11	16	7	54
Avoidable, delayed or under transfusion (ADU)	14	8	18	2	42
Handling and storage errors (HSE)	3	1	9	1	14
Anti-D immunoglobulin errors (Anti-D Ig)	1	0	1	0	2
Haemolytic transfusion reactions (HTR)	0	0	6	0	6
Acute transfusion reactions (ATR)	1	0	22	3	26
Alloimmunisation (Allo)	0	1	3	0	4
Transfusion-associated circulatory overload (TACO)	2	1	1	1	5
Transfusion-related acute lung injury (TRALI)	0	0	1	0	1
Transfusion-transmitted infection (TTI)	0	0	1	0	1
Unclassified complications of transfusion (UCT)	1	5	1	0	7
Total	42	27	79	14	162
Near miss (NM)	50	20	23	4	97
Right blood right patient (RBRP)	6	5	3	1	15

Figure 16.4: Trends in paediatric reports 2007-2015

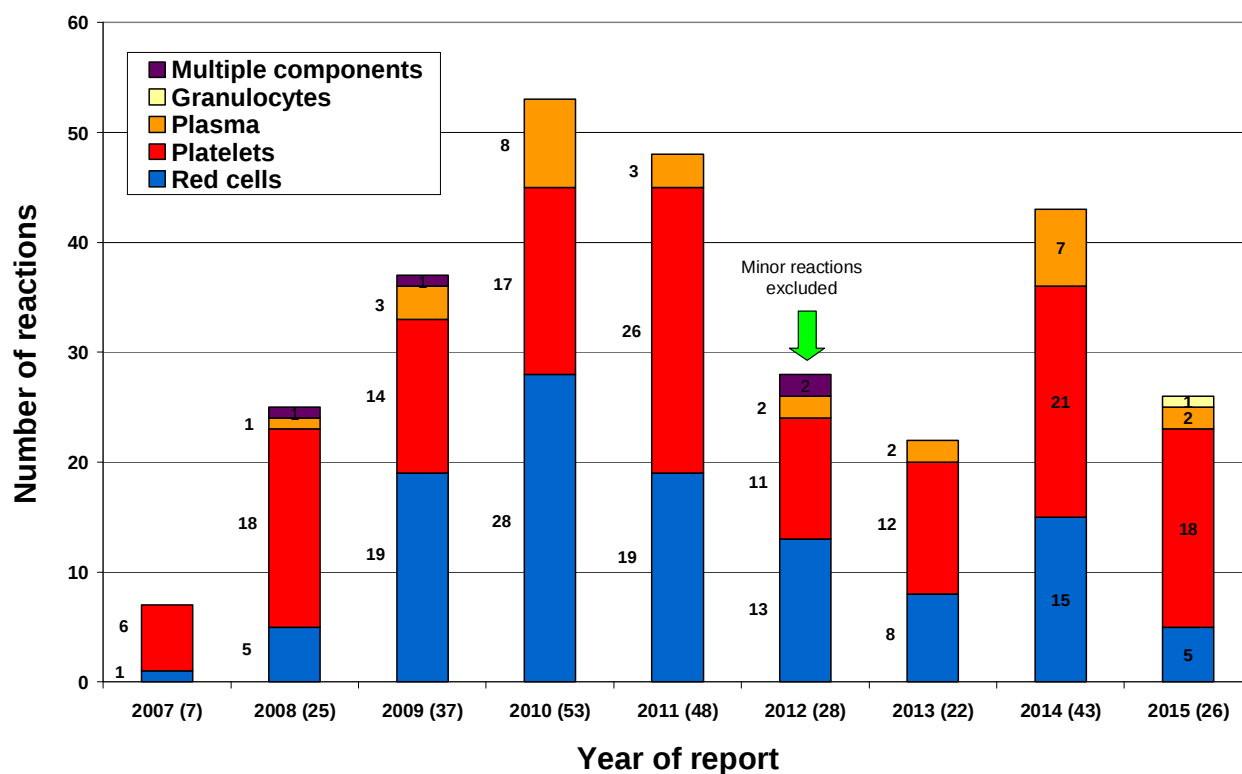
a. Total number of paediatric reports (excluding right blood right patient (RBRP) and near miss (NM) reports)



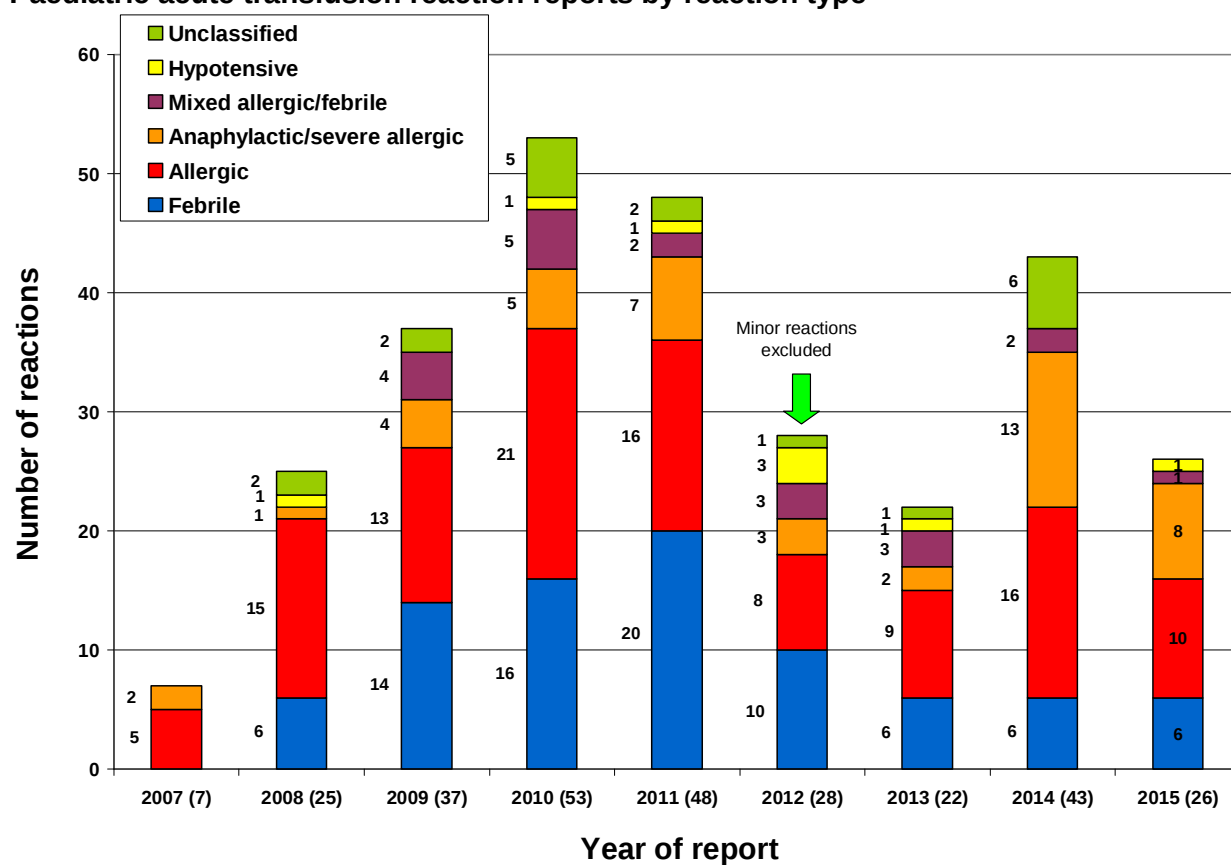
b. Paediatric reports where specific requirements were not met



c. Paediatric acute transfusion reaction reports by component type



d. Paediatric acute transfusion reaction reports by reaction type



Note: in 2007 only cases <16 years were included

IBCT: specific requirements not met (SRNM) n=33

- Clinical cases where requirements not communicated properly to laboratory: n=13
- Laboratory primary error: n=20

Non-irradiated: n=13

- Clinical: n=10 (2 post intrauterine transfusion (IUT), 2 Di George, 1 severe combined immunodeficiency (SCID), 4 haemopoietic stem cell transplant (HSCT), 1 patient on fludarabine)
 - Post IUT, one baby could have been predicted to be likely to require a transfusion at birth so irradiated blood could have been on standby
 - For pre-HSCT patients the clinicians need to remember to update requirements
- Laboratory: n=3 (one DiGeorge where not recorded on the laboratory information management system (LIMS), 1 post IUT, one oncology)

Non-MB/SD plasma: n=9

- 9 cases (including 1 methylene-blue (MB) cryoprecipitate, 1 non-solvent-detergent fresh frozen plasma (SD-FFP) for a thrombotic thrombocytopenic purpura (TTP) case). 4 were in 17 year olds

Others: n=11

- Inadequate pre-transfusion testing/failure to use phenotyped blood:
 - 2 due to lack of clinical request (1 neonate transferred, maternal anti-c not communicated, given emergency blood; 1 sickle cell patient where the diagnosis was not communicated to the laboratory)
 - 8 due to errors in the laboratory: (including 4 neonates where maternal antibody screen not taken into account, a 3 month patient who should have had a serological crossmatch for first transfusion but did not, 2 sickle cell patients given non-phenotyped blood who subsequently developed antibodies)
- Failure to request human leucocyte antigen (HLA) matched platelets by attending clinicians of a patient with HLA antibodies (although they did increment with random platelets)

Avoidable, delayed or undertransfusion (ADU) n=42

- Inappropriate transfusion: 4 (including cryoprecipitate after bleeding stopped and fibrinogen 2.7g/L)
- Transfusion based on the incorrect pre-transfusion result: 7 (including a mistake between results from twins and an erroneous platelet count from a fingerprick sample)
- Delays to transfusion: 20 (various reasons – included three neonatal exchange transfusions due to problems associated with the exchange component: age, shelf-life, irradiation)
- Overtransfusion: 8 (4 pump errors, 4 prescribing errors - 1 of which was due to an incorrect diagnosis)
- Undertransfusion: 2 (1 was prescribed double volume by accident, in the end undertransfused)
- Other: 1 case categorised as 'avoidable use of O D-negative'

Handling and storage errors (HSE) n=14

- Cold chain errors: 5
- Transfusion of expired components: 3
- Excessive transfusion time: 2
- Technical administration error: 4 (pump setting error: 1 – transfusion given too quickly; no/incorrect giving set: 3)
 - extreme case: 1 year old with major haemorrhage post circumcision. No paediatric giving sets in A/E so anaesthetist punctured blood bag several times with needles and syringes and gave blood directly into peripheral venous access with no filter giving set (see main report for further details)

8 were categorised as primarily clinical errors and 6 as laboratory, although were in some cases a mixture of the two.

Acute transfusion reactions (ATR) n=26

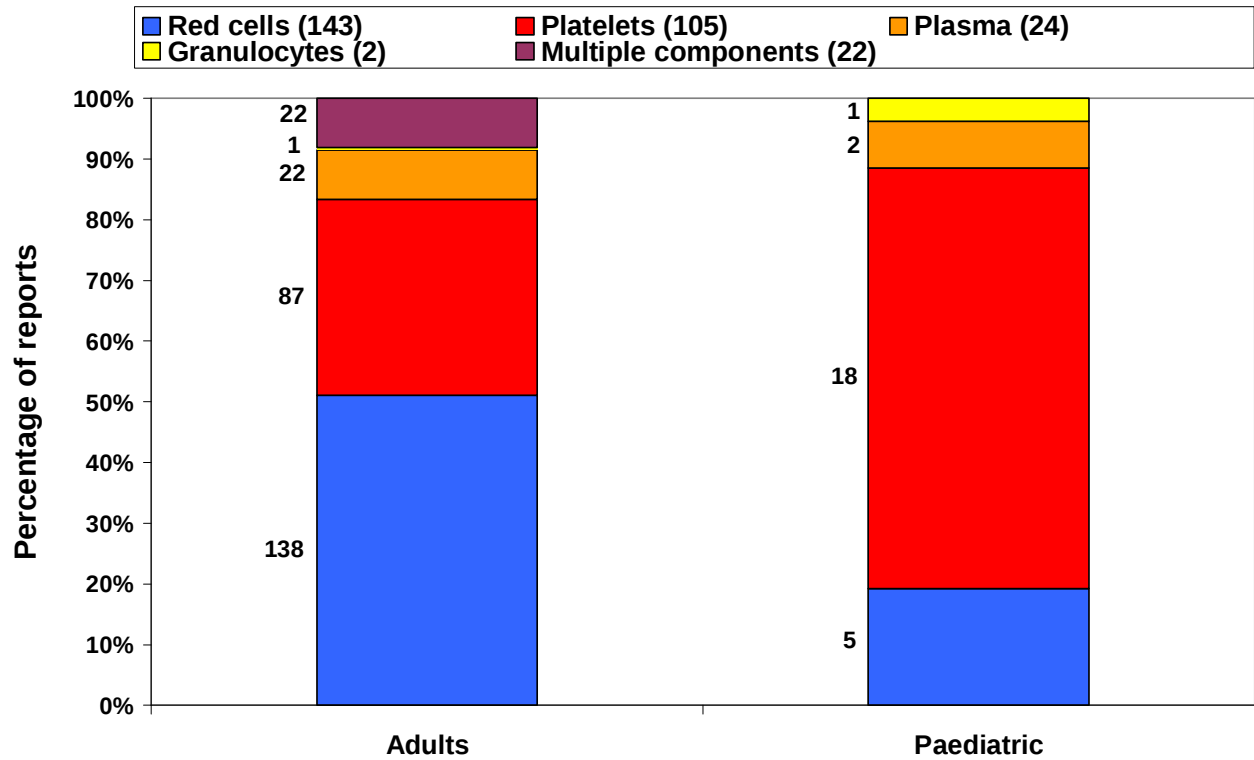
Overall number down from the unexpected increase last year, due mainly to a reduction in reports to red cells and plasma. This year paediatric ATRs were 26/296 total ATR reports (8.7%). Severe paediatric ATR reactions reported were 11/26 (42.3%) but there were no deaths. There were 8 severe reactions to platelets, 2 to plasma, and 1 to red cells. There was only one ATR reported in a neonate (to SD-FFP, see below), and none in infants.

Percentages of ATRs: red cells 19% (5/26), platelets 69% (18/26), plasma 8% (2/26), granulocytes 4% (1/26) - majority to platelets.

- Red cells:
 - All febrile or allergic
- Platelets:
 - Mostly allergic, one third severe allergic. All apheresis except one pooled (with severe allergic reaction)
- Plasma components:
 - One severe hypotensive reaction to SD FFP: 9 day old cardiac surgery patient coming off extracorporeal membrane oxygenation (ECMO) lost cardiac output and arrested whilst receiving SD-FFP. There were no reactions to MB-FFP
 - One severe allergic reaction to MB cryo: 16 year old with acute lymphoblastic lymphoma receiving cryoprecipitate for low fibrinogen levels (see Chapter 11 Acute Transfusion Reactions (ATR) for details of the second MB cryo case in an 18 year old)
- Granulocytes
 - One report, with a moderate febrile reaction in an 11 year-old child with lymphoma

Figure 16.5: Paediatric ATR reports

a. Comparison of proportions of adult and paediatric ATRs related to different components



b. Percentages of reaction types for each component for paediatric reports

