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Conclusions: The Haemovigil system makes it easier for phlebotomists to label patient specimens near the bedside. Even with thorough training, human errors cannot be completely eliminated. On the contrary, the Haemovigil system ensures that everyone in the transfusion chain is following the correct protocols.
We therefore recommend the use of Haemovigil, a cost effective, easy to implement intervention to prevent human errors occurring during specimen collection, blood unit allocation and patient identification prior to transfusion.

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FREQUENCY OF ADVERSE TRANSFUSION REACTIONS REPORTED TO HAEMOVIGILANCE PROGRAMME OF INDIA

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Background: Haemovigilance Programme of India (HvPI) was launched on 10th December, 2012 for surveillance of adverse reactions associated with blood and blood product transfusion, under the broad ambit of national Pharmacovigilance Programme. The National Institute of Biologicals, is the National Co-ordinating Centre and a Core Group and a Haemovigilance Advisory Committee provide oversight to the programme. Reporting is web based through Haemovigil software and the adverse reaction report is uploaded through the Transfusion Reaction Reporting Form (TRRF). The TRRF is a one page form where patient details, blood component details, type and outcome of reaction are captured. A simplified form was introduced to encourage reporting to a new programme.
Aim: To analyse the frequency of various adverse transfusion reactions (ATRs) and assess the quality of data submitted.
Method: The transfusion reactions as reported in the TRRF are based on definitions of the Working Party on Haemovigilance of the International Society of Blood Transfusion (as adopted June, 2013) and were analysed with regard to following parameters as recorded in the TRRF:

1. Type of transfusion reaction.
2. Causality assessment.
3. Type of blood components transfused.
4. First time or repeat transfusion.
5. Clinical diagnosis of the patient.
6. Outcome after the transfusion reaction.

Results: Number of blood centres enrolled in HvPI till December 2014 is 191 out of which 54 centres have submitted transfusion reaction reports. A total of 1728 transfusion reactions were reported in 1679 patients, thus 49 patients had more than one transfusion reaction. Paediatric patients were 117 (6.9%), rest were adults. The male female distribution was 869 and 810 patients respectively. Mortality occurred in 10 patients, in 4 it was due to the transfusion reaction, in the remaining 6, death was attributable to underlying condition. Five patients recovered with sequelae, 1472 recovered completely and in 192 patients the outcome was not known. FNHTRs (42.9%) and mild allergic (29.1%) reactions constituted the most frequently reported ATRs. First time transfusion was reported in 237 FNHTRs and repeat in 175 reactions Anaphylactic/hypersensitivity reactions occurred in 162 patients (9.38%), In 108 patients reaction occurred after first transfusion episode.
Haemolytic transfusion reactions (HTRs) were reported in 69 out of 1679 patients (4.1%). Out of the 69 HTRs 11 (15.9%) were due to ABO mismatch 29(42.02%) due to non-ABO alloantibodies and 29 (42.02%) due to non-immune haemolysis. In immune HTRs due to other allo-antibodies 23 out of 29 (79.3%) were patients with thalassemia (11) or other chronic haemolytic anaemias (12) on regular transfusion. TRALI was reported in 4 patients. TTBIs were reported in 16 out of 1679 patients (0.95%).Mortality resulted due to HTR (2 cases),TTBI (one neonate) and TRALI(one patient).
Conclusion: A successful haemovigilance programme has been established in India. Numbers of centres reporting to HvPI is steadily increasing. The TRRF has been expanded further to capture clinico-laboratory details and causative factors.

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AN ANALYSIS OF LABORATORY ERRORS: WHAT GOES WRONG AND WHEN DO ERRORS OCCUR?

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Background: Laboratory errors in transfusion practice continue to put patients at risk. In 2009 the UK confidential haemovigilance reporting scheme (Serious Hazards of Transfusion, SHOT) highlighted that many of the wrong blood incidents in 2006–2009 occurred due to errors in the transfusion laboratory, with 144/274 (52.6%) occurring outside core hours (core hours are defined 8am–8 pm).
Aim: This review was undertaken to see if the pattern of laboratory-related wrong blood incidents reported from 2010–2014 has changed over a period when many changes have taken place in UK laboratories intended to consolidate services and provide a leaner process with potential savings for the National Health Service.
Method: A retrospective analysis was performed of laboratory errors reported to SHOT 1/01/2010-31/12/2014 which resulted in transfusion of an incorrect blood component.
This includes errors associated with:
Sample receipt- information missed or not heeded during 'booking in'.
Testing.
Component selection.
Component labelling, availability and handling and storage of blood components.
Other.
Results: Over these 5 years of reporting 157/215 (73%) of wrong blood incidents occurred during core hours, 45/215 (21%) outside core hours, and time was not stated in 13/215 (6%). The laboratory steps at which the errors occurred are shown in the Table.
These errors contributed to 9 ABO-incompatible red cell transfusions. Six errors occurred during core hours, (one patient experienced a haemolytic transfusion reaction after a component selection error). Three were outside core hours, with no resulting major morbidity.
Wrong blood events outside core hours have decreased from 144/274 (52.6%) reported in 2006–2009 to 45/215 (20.9%) in 2010–2014.

Table: Laboratory steps at which the errors occurred

Laboratory step	Core hours	Out of hours	Not stated	Total	Percentage (%)
Sample receipt and registration errors	38	4	6	48	22.3
Testing	56	16	4	76	35.3
Component selection	52	23	3	78	36.3
Component labelling, availability and handling and storage of blood components	8	2	0	10	4.7
Other	3	0	0	3	1.4

Conclusions: This 5-year analysis confirms that most laboratory errors now occur during core hours in contrast to previous observations in 2006–2009. In previous years the errors were believed to occur out of hours because biomedical scientists who did not routinely work in transfusion were covering transfusion 'out of hours.' The United Kingdom Transfusion Laboratory Collaborative (UKTLC) was established in 2006 to improve and promote high standards with regard to staffing levels, technology, knowledge and skills both in and outside core working hours. Staff are now regularly competency-assessed, however local investigation into errors must be carried out and a full root cause analysis performed to ascertain why they occurred.
The continuing level of laboratory error is disappointing. Pathology services in the UK are undergoing changes which impact on availability of expertise in transfusion laboratories. Laboratories have financial constraints with fewer resources allocated for training and education. It is clear that further measures are required to reduce the number of errors. The UKTLC has published new standards for transfusion laboratories in 2014. SHOT endorses these recommendations. All organisations providing blood transfusion services are urged to adopt these standards in the interests of patient safety.

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