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

Hema Mistry¹, Alison Watt¹, Tony Davies¹,², and Paula HB Bolton-Maggs¹, ³

¹Serious Hazards of Transfusion Office, Manchester, ²Patient Blood Management Team NHSBT, ³University of Manchester, UK,

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 (defined as 08:00-20:00). Since 2009 there has been a period of pathology consolidation with the intention of making savings for the National Health Service (NHS). Many changes have taken place in UK transfusion laboratories which are intended to provide a leaner process.

Aim

This review was undertaken to determine if the pattern of laboratory-related wrong blood incidents reported in the period 2010-2014 has changed compared to 2006-2009 coincident with many changes in laboratory organisation.

Method

A retrospective analysis was performed of laboratory errors reported to SHOT from 1st Jan 2010 - 31st Dec 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 and Other.

Results

Over this five year reporting period, laboratory errors resulted in 9 ABO-incompatible red cell transfusions, 6 occurred during core hours and 3 errors were made outside core hours. One patient had a haemolytic transfusion reaction and there were no adverse clinical reactions in the other 8.

Timing:

- 157/215 (73%) occurred during core hours
- 45/215 (21%) occurred outside core hours
- Time was not stated in 13/215 (6%)

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.

Conclusions

This 5-year analysis confirms that most laboratory errors now occur during core hours in contrast to previous observations in 2006-2009. In the earlier period the errors were thought to occur out of hours because some biomedical scientists covering transfusion out of hours did not routinely work in transfusion. 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. 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 minimum standards for staff qualifications, training, competency and the use of information technology in hospital transfusion laboratories in 2014 (Chaffe B, Glencross H et al. Transfusion Medicine 24 (6) 335-340 ). SHOT endorses these standards. All organisations providing blood transfusion services are urged to adopt these standards in the interests of patient safety.

www.shotuk.org