What’s the hold up? – delays in the provision of blood

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Background
In October 2010, The National Patient Safety Agency (NPSA) issued an eight action point alert ‘NPSA/2010/RRR017: the transfusion of blood and blood components in an emergency’, to be completed by acute NHS organisations across England and Wales by 26th April 2011. The intention was to focus hospital attention on the systems and human factors that impact on the provision of blood in an emergency.
Point 7 of this alert notes that all incidents where there are delays or problems in the provision of blood in an emergency are to be reported and investigated locally, and reported to the NPSA and the Serious Hazards of Transfusion (SHOT) scheme.

Aims
- To review the common factors affecting the appropriate, effective and timely provision of blood
- Promote lessons learned from these events in order to improve transfusion practice in hospitals and enhance patient outcomes

Method
Reporters in hospitals registered with SHOT (98% of UK hospitals) entered data onto the SHOT database. The existing ‘Inappropriate and Unnecessary Under/Delayed transfusion’ SHOT questionnaire was expanded to capture these data. The intention was to collect information where patients actually did or may have come to harm as a result of delay in making appropriate decisions to transfuse, or delay in provision of the components from the Blood Services or local transfusion laboratory.
A retrospective analysis of delayed transfusion events reported to SHOT for 24 months between October 2010 and September 2012 was undertaken.

Results
There were 23 reports of delays with 2 deaths:

Case 1 (imputability 1, possible)
There was a delay in the transfusion of a middle-aged patient in the emergency department. The internal investigation concluded that there was a serious lack of understanding of the major haemorrhage policy.

Case 2 (imputability 3, certain)
A post-partum fatality resulted from an underestimation of blood loss with the patient transferred between 3 clinical areas, compounded by staff shift changes and delay in timely and appropriate clinical assessment.

Causes of delay
- In 8/23 cases a massive haemorrhage protocol response was initiated but this was hindered by a lack of understanding which in 2 instances lead to it being called late or stood down too early.
- Misinterpretation of local policy for overnight transfusions
- Reliance on taxis to transport blood samples and components
- Lack of provision for laboratory cover in the event of a fire drill

Location/specialty of delay
The majority of delays 14/23 (61%) were reported from emergency departments (1 death) or theatres with 4/7 (57%) of the theatre cases relating to obstetric patients (the second death).
A further 2 cases took place on the delivery ward - 6 obstetric cases overall.

Conclusions
Delays to the provision of blood in an emergency can have serious consequences. Clear and effective, two-way communication between the clinical area and the blood transfusion laboratory with timely and complete reference to Massive Haemorrhage Protocols is essential when transfusion is required urgently. All staff must have a working knowledge of local policies and procedures relating to massive haemorrhage. Root cause analyses (RCA) that were available in the 23 reports analysed here identified specific areas for improvement including revision of the service level agreement with taxi companies, documented procedures for laboratory evacuation in the event of a fire drill, but above all improved education and awareness of major haemorrhage procedures, particularly in non-trauma settings.

Learning Point - A comprehensive RCA of delayed transfusion events should be undertaken to identify lessons learned which should be used to improve transfusion practice and enhance patient outcomes.