2022 Annual SHOT Report – Supplementary information

Chapter 8: Human Factors and Ergonomics in SHOT Error Incidents

Additional analysis not included in the main 2023 Annual SHOT Report.

Illustrative case

Human factors analysis in a transfusion-associated circulatory overload (TACO) case reported to SHOT

An elderly patient was admitted to the emergency department (ED) unwell, with shortness of breath and sepsis. A full blood count sample was sent to the laboratory and a haemoglobin result of 65g/L and pancytopaenia was reported to the clinical area. The haemoglobin result was discrepant to results obtained by point-of-care testing using venous blood gas samples. A TACO risk assessment was carried out pre transfusion and risks of TACO were identified including heart failure. One unit of red blood cells was requested, and the transfusion was commenced over three hours. Observations recorded during the transfusion found that the patients National Early Warning Score (NEWS) score had increased, indicating that the patient was having a reaction, and the transfusion was stopped while medical review was undertaken. Following review furesomide was administered to the patient, the transfusion was recommenced, and observations were recorded more frequently. A chest X-ray showed bilateral effusions consistent with fluid overload. A post-transfusion full blood count sample was sent to the laboratory which showed a haemoglobin result of 145g/L and improved platelet count. On investigation it was discovered that the wrong patient's results had been released to the clinical area initially, and that the decision to transfuse had been made on erroneous laboratory results with no review of point-of-care test results. The patient recovered and survived, and a structured TACO investigation was performed using the dedicated SHOT template.

Situational factors

Unwell patient with multiple comorbidities and potential difficulties in consenting, participating in the positive patient identification process and communicating communicate worsening respiratory symptoms.

ED doctors responded to the full blood count result from the laboratory rather than review any point-of-care samples they had processed. Staffing pressures.

A junior doctor authorised the blood.

Local working conditions

Routine transfusion but outside normal working hours.

The incident originated in the ED, these are known nationally to be under extreme pressures with high activity and patient acuity *(this particular dept had been in news).* Blood transfusion observations had been performed inadequately in line with local policy.

Organisational factors

All haematology and chemistry samples that were received with order comms labels from ED were automatically relabelled before processing due to the 1-hour turnaround time Key Performance Indicator (KPI).

Historical samples – not queried because the patient was in ED, was there a historical check? Do analysers automatically do a historical check of previous FBC?

External factors

Equipment - samples were not being labelled correctly in the ED. This had led to a work-around by laboratory staff that meant all haematology and chemistry samples that were received with order comms labels from ED were automatically relabelled before processing due to the 1-hour turnaround time KPI. The reason for this that a lot of the barcodes were not placed correctly on sample tube, so the laboratory departments took the stance to relabel the samples as soon as they arrived rather than them wait to see if the analysers rejected the barcodes and then relabelling the samples. On this occasion the member of staff in the laboratory stuck the wrong label on the wrong bottle. What were the circumstances leading to incorrect labelling in ED? Rushing, lack of equipment to place labels?

A junior doctor authorised the blood, pay and conditions known to be suboptimal leading to national high-profile strikes.

Communication and culture

The ED did not report to the transfusion laboratory that the patient had a reaction, this was found out when the transfusion laboratory reported that the laboratory had relabelled the sample incorrectly.

Culture of not labelling samples correctly had led to a process drift and work around in the laboratory.

Corrective actions included training and posters to go to ED for them to send out immediately on how to label samples. Haematology and chemistry laboratories to complete audit of all samples from ED as the root cause is ED staff not labelling correctly.