

Patient Safety Bulletin

Timely escalation, clear communication, co-ordination and effective handover matter for patient safety

What happened and what were the issues/implications?

The Serious Hazards of Transfusion (SHOT) haemovigilance scheme collects and analyses anonymised information relating to adverse events and reactions to blood transfusions in the UK. This data is used to identify recommendations for safe transfusion practice, which are communicated in the SHOT Annual Reports. Illustrative cases form part of these reports, all of which are anonymised and used to promote key safety messages. The case discussed below is based on one such report.

An elderly woman in her 90s who was on an oral anticoagulant was admitted to the emergency department (ED) with a gastrointestinal bleed. She was pale with hypotension (blood pressure 88/55 mmHg) and tachycardia, and was assessed within 3 minutes of arrival. She was noted to be in shock from blood loss. Her Hb on the blood gas machine on admission was 41.8 g/L. The major haemorrhage protocol was not activated. Transfusion was delayed for almost 7 hours from admission due to multiple factors, and she died shortly after it was started.

The requirement for urgent treatment with blood components was communicated by the ambulance team to the resus team, but this was not documented. The nursing staff in the ED were aware of the abnormally low haemoglobin and a high lactate reported by the laboratory and assumed that the doctor who reviewed the patient was also aware. The doctor attending the patient did not work routinely in ED, was not used to dealing with haemorrhage situations and found the blood ordering system complex. The doctor did not review the blood results when assessing the patient, which impacted management decisions.

As a result of suboptimal handover between shifts, assumptions made and communication failures, there was a delay of nearly 7 hours before any blood components were transfused. The patient was transferred to the ward and had deteriorated significantly before receiving a blood transfusion. The patient did not receive treatment for deranged clotting screen or reversal of the anticoagulant. The patient died within 30 minutes of receiving a blood transfusion.

The gastrointestinal bleed may have proved fatal even with appropriate treatment; however, there was a significant delay in treatment, most notably in the activation of the major haemorrhage protocol and appropriate transfusion support, which was noted to have been contributory to the patient outcome.

The local serious incident review for this event, which was shared with SHOT, identified several factors contributing to the treatment delays in this case, including poor handover, communication issues at various levels, lack of clarity about lines of responsibility especially with the patient being transferred between wards and clinical teams, the complexity of tasks resulting in errors, staff working in unfamiliar circumstances, and a lack of clarity about processes including escalation and requests for additional help from colleagues, which hampered treatment decisions and patient care. Assumptions, poor situational awareness, shift changes with multiple work demands were also contributory.

What actions were taken?

Appropriate actions were implemented, including a standardised hospital pre-alert that would result in a fast-track to resuscitation, structured handovers, timely communication of laboratory results to senior clinicians and mandatory transfusion training for all clinical staff.

The learning from this, and other similar events reported to SHOT, were used as learning points and recommendations for improvement in the 2020 Annual SHOT Report:

- Major haemorrhage protocols (MHP) need to be practical and efficient. All cases of activation should be reviewed to learn from each event.
- The MHP may vary between hospitals and between departments, e.g. ratios of red cells to plasma may be different for obstetric haemorrhage compared with trauma. Staff need to be aware of local protocols and know how to access components in an emergency.
- Patient transfer between departments and clinical teams is associated with delays in transfusion. Where it is recognised that a patient requires urgent transfusion, delays must be avoided. Every effort must be made to ensure prompt transfusions, which should be commenced without waiting for transfer of patients to other departments.
- Clinical staff involved in frontline care must be trained to recognise major blood loss early and know when to activate/trigger the local major haemorrhage protocol and take prompt and appropriate action.¹
- Major haemorrhage protocols should be regularly reviewed and practiced with drills particularly in areas of greatest risk, i.e. emergency departments, obstetrics and operating theatres.
- Ensure that all communication channels function well, particularly the correct pathway for activation, including means of contacting porters and transfusion laboratory staff.
- Major haemorrhage activations should be regularly audited to ensure lessons are learned.

In addition, SHOT recommend and highlight the need for simplified processes that are easy to follow, structured timely handovers and holistic training of all staff, including technical and non-technical skills such as awareness of human factors principles and the impact of cognitive bias in day-to-day practice. All these help improve patient safety.

What did you learn?

Learning from delays in transfusion was shared in the 2020 SHOT Report:

- Serial delays at different transfusion steps are cumulative and can result in patient harm or death.
- Good communication between clinical and laboratory staff is essential and a structured handover is vital for safe patient care.
- Many different groups of staff will be involved in the management of major haemorrhage; team-based, multi-professional learning supports effective teamwork.
- Patient transfer between departments and clinical teams is associated with delays in initiating appropriate management. Standardising transfer processes, taking into consideration the urgency of measures that need to be taken, is vital.

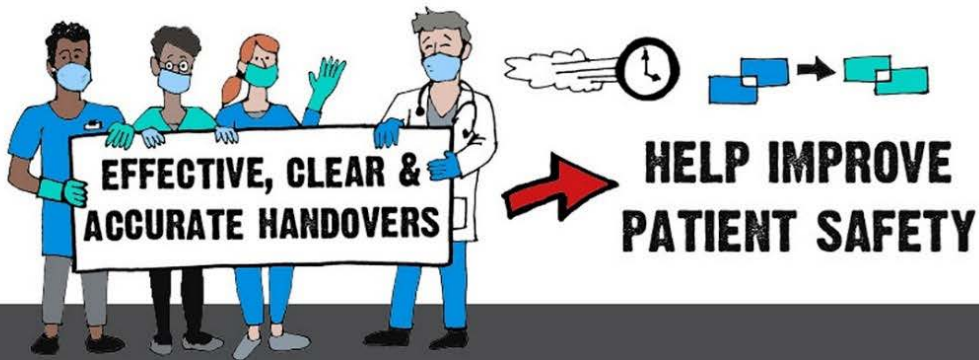
Important lessons can be learned from reviewing all major haemorrhage protocols, including those where there was no adverse impact on the patient. Effective investigation of incidents and near miss events, identification of system factors that caused or contributed to the incident, application of effective corrective and preventive actions, and closing the loop by measuring the effectiveness of interventions should be carried out to optimise learning from incidents.

Adopting a Safety II approach² and learning from excellent practice can identify aspects of good practice that can be embedded into the system with the aim of getting it right every time. SHOT has introduced a process for reporting excellent practice, acknowledging continuing excellence (ACE), so that learning can be shared nationally. Organisations are encouraged to report learning from MHPs where good practice is identified, transferrable and can be adopted in other organisations to provide a consistent level of good transfusion practice.

SHOT recommendations also include the importance of the consideration of human factors and systems thinking in both incident investigation and the actions taken to reduce risk of recurrence. Understanding the impact of human factors on an event enables identification of effective corrective and preventive actions (CAPA) that can be embedded into the system. Employment of CAPA across the range of the intervention hierarchy will support consistency in safe practice.

Transfusion delays in emergencies can be caused by numerous issues including equipment failure, wrong assumptions, staff shortages, communication failures and lack of knowledge. In the 2020 SHOT report, 71/133 (53.4%) cases of delayed transfusions cited communication failure as a major factor in the incident.³ Effective communication is key in avoiding delays in transfusion, including full blood count results, activation of MHP and availability of blood components. Communication is often verbal, but where electronic systems are available these should be utilised to escalate and prompt clinical and laboratory teams of the need for urgent action.

Escalation processes for abnormal laboratory results should ensure that the results are communicated to the appropriate teams as well as the attending team.⁴ Organisations should ensure that safe systems are embedded into clinical and laboratory practice to ensure that we get it right first time, every time.



How was the learning shared?

Learning from incidents and from excellence is shared nationally by SHOT via the Central Alerting System⁵ and the following resources

- [SHOT Annual Reports](#), freely available
- [current SHOT resources](#)
- [SHOT email signatures](#) to share transfusion lessons
- [SHOT video on delayed transfusions](#)
- [ACE chapter](#) from the 2020 Annual SHOT Report
- [Human Factors](#)
- [Incident investigation SHOT Bites](#).

References

¹ NHS Blood and Transplant. 2018 Audit of the Management of Major Haemorrhage. 2018. Available at:

<https://nhsbt.dbe.blob.core.windows.net/umbraco-assets-corp/19130/2018-major-haemorrhage-audit-full-report.pdf>

² Hollnagel E, Wears RL and Braithwaite J. From Safety-I to Safety-II: A White Paper. The Resilient Health Care Net. University of Southern Denmark, University of Florida and Macquarie University, Australia, 2015. Available at:

<https://www.england.nhs.uk/signuptosafety/wp-content/uploads/sites/16/2015/10/safety-1-safety-2-white-papr.pdf>

³ Serious Hazards of Transfusion. Annual SHOT Report 2020. 2020. Available online:

<https://www.shotuk.org/wp-content/uploads/myimages/SHOT-REPORT-2020.pdf>

⁴ Royal College of Pathologists. Patient Safety Bulletin – Danger in Delay. 2021

<https://www.rcpath.org/uploads/assets/09ca0069-fb32-4391-b8af33c42af6e425/Danger-in-delayFinal.pdf>.

⁵ Serious Hazards of Transfusion. Central Alerting System – Preventing Transfusion Delays in Bleeding and Critically Anaemic Patients. 2022. Available at: <https://www.cas.mhra.gov.uk/ViewandAcknowledgment/ViewAlert.aspx?AlertID=103190>

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