SHOT Safety Notice 02: Ensuring patient specific transfusion requirements are met

Ensuring patient specific transfusion requirements are met

This SHOT Safety Notice has been issued to highlight the importance of meeting transfusion specific requirements for all elective transfusions. Modified or special blood components may be appropriate in specific clinical settings to reduce the risk of transfusion-related harm, including death. In an emergency such as active bleeding in major haemorrhage, haemolysis or severe decompensated anaemia, standard components MUST be given to preserve life if specific components cannot be sourced quickly enough. Do NOT delay the issue of standard components as **every minute counts in emergencies and transfusion delays must be avoided.**

This notice should be used as a basis to review local policies and procedures, to identify areas for improvement and implement effective solutions.

Incidents where a patient was inadvertently transfused with a blood component that did not meet their specific requirements are reportable to SHOT, for example;

- Irradiated components
- Cytomegalovirus (CMV) negative components
- Human leucocyte antigen (HLA)-matched platelets
- Antigen-negative red cell units for a patient with known antibodies
- Red cells of extended phenotype (e.g., haemoglobinopathy, or treatment with monoclonal antibodies such as anti-CD38 and anti-CD47)
- Component with a neonatal specification

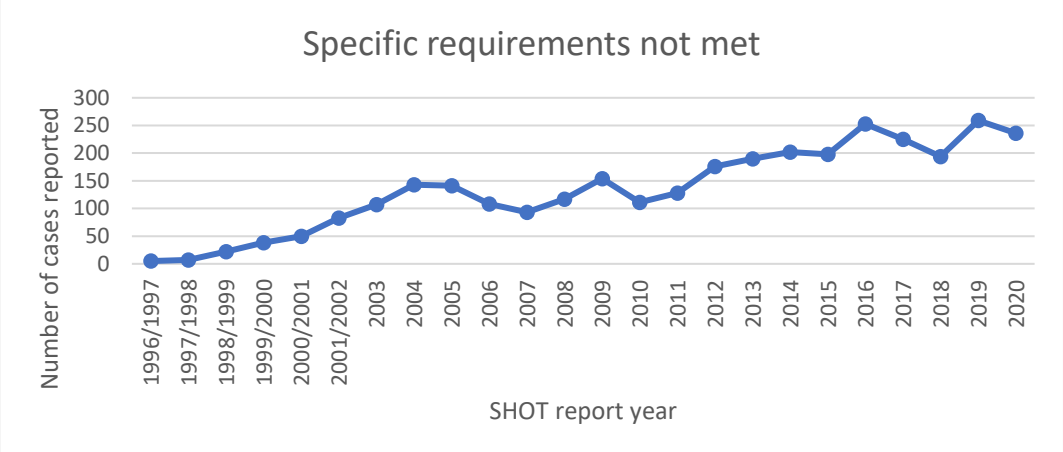
This does not include cases where a clinical decision was taken to transfuse components not meeting the specification due to clinical urgency. Other incidents in this category reportable to SHOT include;

- Inadvertent release of components prior to completion of laboratory testing (including internal quality control)
- Failure to use blood warmer when clinically indicated
- Inappropriate use of electronic issue

The SHOT definitions can be accessed using this link: https://www.shotuk.org/reporting/

Reports relating to incorrect blood components transfused where the specific requirements were not met (IBCT-SRNM) have been increasing since SHOT reporting began in 1996 (see figure 1 below).

Figure 1: IBCT-SRNM errors reported to SHOT 1996-2020



Between 2016-2020, IBCT-SRNM errors accounted for 8.4% (1167/13833) of errors analysed and included in the Annual SHOT Reports. Ten percent (117/1167) of cases involved paediatric patients. No deaths occurred due to IBCT-SRNM during this period, but 12 cases of major morbidity resulted due to these errors (Figure 2). Errors have been reported from both clinical and laboratory settings. Most clinical errors are failure to request irradiated or CMV screened

components, and most laboratory errors are failure to complete testing prior to issue, inappropriate use of electronic issue or providing the incorrect phenotype.

Figure 2: Major morbidity caused by IBCT-SRNM between 2016-2020 (n=12)

11 cases resulted in sensitisation to K antigen	One case of haemolytic transfusion reaction

Regulatory aspects and relevant guidelines

Blood Safety and Quality Regulations 2005. The Blood Safety and Quality Regulations 2005 (legislation.gov.uk)

Good Practice Guidelines (Council of Europe, 2018: https://www.edqm.eu/en/good-practice-guidelines-blood-establishments)

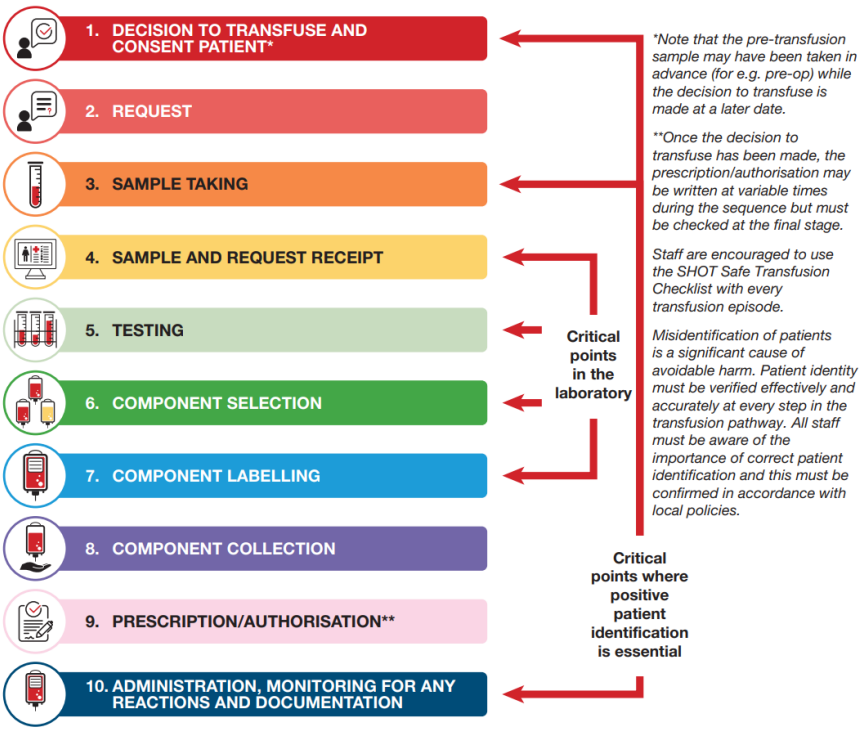
ISO15189:2012 Medical laboratories — Requirements for quality and competence (https://www.iso.org/standard/56115.html)

BSH Guidelines https://b-s-h.org.uk/guidelines/?category=Transfusion&fromdate=&todate=

Ensuring safe transfusions for patients

Staff involved in blood transfusions need to have knowledge of blood components, indications for use, rationale for specific transfusion requirements and an understanding of the availability of alternative options. Staff should be aware of the risks and benefits of transfusions and MUST be able to identify and manage possible reactions. Ensuring transfusion process safety is as important as blood component safety and quality. Potential for error exists at each step in the process of transfusion and learning from incidents should drive improvements in healthcare. Figure 3 covers the steps in the transfusion process from making the decision to transfuse to administration of blood and monitoring for any reactions.

Figure 3: The ten steps in the transfusion pathway



Interventions along the transfusion pathway. Review each step of the process to ensure specific requirements for transfusions are met (please use the Gap Analysis Action Tool circulated with this document to plan actions):

Yes / No

DECISION TO TRANSFUSE AND PATIENT CONSENT

- Are specific requirements for transfusions for certain patient groups included in an easily accessible hospital transfusion policy?
- Are specific transfusion requirements considered and captured in patient records?
- Is information needed to identify specific requirements for certain groups of patients easily accessible?
- Is there a process for informing patients/ families about their specific transfusion requirements?

Yes / No

TRANSFUSION REQUEST AND SAMPLES

- Are specific transfusion requirements captured and visible on electronic/paper patient records at the time of ordering?
- Is there a mandatory field where staff must capture specific transfusion requirements on the transfusion request?

Yes / No

SAMPLE AND REQUEST RECEIPT

- Is there a process for confirming any specific transfusion requirements on receipt of request?
- Are specific requirements captured on laboratory information management system (LIMS) on receipt of blood order and/or other communication process?

Yes / No

TESTING

- Is there an SOP for situations where specific transfusion requirements impact on testing?

Yes / No

COMPONENT SELECTION

- Does the LIMS alert the user if any specific requirement is not met?
- Can the LIMS prevent the issue of incompatible components, can this be overridden and the reason recorded?
- Do all lab staff have access to NHSBT Sp-ICE* or equivalent where this is available?
- Is there a process for confirmation of patient transfusion/antibody history (NHSBT Sp-ICE* or equivalent)?

*__Sp__-ICE Specialist Services electronic reporting using Sunquest's __I__ntegrated __C__linical __E__nvironment

Yes
No

COMPONENT LABELLING

- Can the specific transfusion requirement be included on the label for the component?
- Is the specific transfusion requirement easily visible to clinical staff?

Yes
No

COMPONENT COLLECTION

- Do checks at collection or on arrival on the ward/clinical area include whether the component meets any prescribed specific transfusion requirements?

Yes
No

PRESCRIPTION

- Is the information about patient's specific transfusion requirements captured on the prescription?
- Is this information visible to the staff administering the component?

Yes
No

ADMINISTRATION AND DOCUMENTATION

- Is a check for specific transfusion requirements part of the pre-administration check?
- Is information about transfusions and specific requirements captured on patient discharge summaries?
- Is there a process for shared care for specific requirements?

Yes
No

INFORMATION TO TRANSFUSION LABORATORIES AND BLOOD SERVICES

- Are specific transfusion requirements communicated by clinical teams to the hospital transfusion laboratory at the time of identification?
- Are specific requirements communicated to the receiving hospital (including lab) when a patient is transferred?
- Is the Blood Service informed of specific requirements when referring samples or requesting components?

Yes
No

STAFF TRAINING AND COMPETENCY ASSESSMENT

- Are specific requirements covered as part of transfusion training for clinical and laboratory staff?
- Do transfusion competency assessments cover the need for specific requirements?

Yes
No

POLICIES, PROTOCOLS, AUDITS AND LEARNING FROM INCIDENTS

- Does the local transfusion policy and major haemorrhage protocol specify that in case of emergencies, to avoid transfusion delays, if the patient's specific transfusion requirements cannot be met, standard blood components must be issued to avoid any transfusion delays?
- Are incidents where transfusion specific requirements were not met recorded, tracked and trended?
- Is learning captured from incidents? Are incidents reported to SHOT/SABRE Is this process audited regularly?

If the answer is 'no' to any of these, then appropriate actions need to be taken locally to ensure safe transfusions. Use the Gap Analysis Action Tool provided with this Safety Notice to help plan actions.

Key points to note

- It is essential that staff are adequately trained and competency-assessed before performing any transfusion related task without supervision
- Clear, timely, robust communication is essential between clinical and laboratory teams to ensure safe transfusions
- Flags and alerts in LIMS should be appropriate and not easily overridden
- Information relating to transfusion specific requirements should be included in the prescription/authorisation
- A robust checking process at the administration step immediately prior to transfusion is critical to support safe transfusions

Useful resources:

SHOT Bite No. 20 Incorrect blood component transfused – specific requirements not met errors

NHS Blood Assist App

British Society for Haematology Transfusion Guidelines

Transfusion handbook